4.2 Transportation/Circulation

The following summarizes the findings of the Grantville Redevelopment Traffic Impact Analysis (Katz, Okistu & Associates, November, 2004). The traffic study technical report is provided in Volume II Appendix B of this EIR.

4.2.1 Existing Conditions

4.2.1.1 Methodologies

The traffic analysis examines existing (Year 2004) and Horizon Year (Year 2030) timeframes. Street system operating conditions are typically described in terms of "level of service." Level of service is a report-card scale used to indicate the quality of traffic flow on roadway segments and at intersections. The Level of service (LOS) ranges from LOS A (free flow, little congestion) to LOS F (forced flow, extreme congestion). A more detailed description of LOS is provided in the traffic technical study (see Volume II, Appendix B of this EIR).

Roadway Segment Capacity Analysis. The City of San Diego has published daily traffic volume standards for roadways within its jurisdiction. To determine existing service levels on study area roadway segments, a comparison was made among the appropriate average daily traffic thresholds for level of service, the daily capacity of the study area roadway segments, and the existing and future volumes in the study area.

Intersection Capacity Analysis. The analysis of peak hour intersection performance was conducted using the Traffix analysis software program, which uses the "operational analysis" procedure for signalized intersections as defined in the Highway Capacity Manual (2000 HCM). This technique uses 1,900 passenger cars per hour of green per lane (pcphgpl) as the maximum saturation flow of a single lane at an intersection. This saturation flow rate is adjusted to account for lane width, on-street parking, conflicting pedestrian flow, traffic composition (i.e., percent of trucks) and shared lane movements (e.g., through and right-turn movements from the same lane). Level of service for signalized intersections is based on the average time (seconds) that vehicles entering an intersection are stopped or delayed.

The Highway Capacity Manual analysis method for evaluating unsignalized, minor street stop intersections is based on the average total delay for each impeded movement. As used here, total delay is defined as the total elapsed time from when a vehicle stops at the end of a queue until the vehicle departs from the stop line. This time includes the time required for the vehicle to travel from the last-in-queue to the first-in-queue position. The average total delay for any particular minor movement is a function of the service rate or capacity of the approach and the degree of saturation.

4.2.1.2 Existing Circulation Network

Streets and highways in the study area that could be impacted by the proposed project include Fairmount Avenue, Friars Road, Mission Gorge Road, and Waring Road.

Fairmount Avenue. Fairmount Avenue consists of two separate segments, Interstate 8 (I-8) to Mission Gorge Road and Mission Gorge Road to Sheridan Lane. Between I-8 and Mission Gorge Road, Fairmount Avenue is classified as a four-lane major road with posted speeds of 30 MPH. The segment between Mission Gorge Road and Sheridan Lane is a two-lane collector street servicing light industrial and business uses. Parking is limited to the segment between Mission Gorge Road and Sheridan Lane. Bus service is only provided on the segment of Fairmount Avenue between I-8 and Mission Gorge Road. No bike lanes are provided.

Friars Road. Friars Road is classified as a 6-lane primary arterial, which runs in an east-west direction between Interstate 15 (I-15) and Mission Gorge Road. Speeds are posted at 50 MPH. At the east end of the segment, the through movement becomes Mission Gorge Road and Friars Road effectively ends. Bus service is provided on Friars Road between I-15 and Rancho Mission Road via Route 13, but there is no service on the segment between Rancho Mission Road and Mission Gorge Road. There are no bike lanes on Friars Road.

Mission Gorge Road. Mission Gorge Road consists of two separate segments, between Fairmount Avenue and Friars Road and between Friars Road and Jackson Drive. Between Fairmount Avenue and Friars Road, Mission Gorge Road is a 4-lane north-south major roadway with existing bus service. Speeds are posted along this segment at 30 MPH. Mission Gorge Road is an east-west arterial between Friars Road and Jackson Drive, with a majority of the roadway classified as a 6-lane primary arterial transitioning to a 6-lane major roadway. However, the segment of Old Cliffs Road to Katelyn Court is a 4-lane roadway and the segment of Katelyn Court to Princess View Drive is a 5-lane roadway. The posted speeds range on these segments between 45 and 55 MPH and no bus service is provided along this route. There is an existing shared bicycle route (class III) along this segment.

Waring Road. Waring Road is classified as a north-south 4-lane major roadway, which provides access to I-8. Speeds are posted along this segment at 35 MPH. Existing bus service is provided along the entirety of this route by bus Routes 40 and 13. In addition, an existing bicycle route (Class III) is provided between Zion Avenue and Princess View Drive.

4.2.1.3 Daily Roadway Segment Operations

Table 4.2-1 and Figure 4.2-1 summarize the results of the existing daily roadway segment analysis. All roadway segments currently operate at LOS D or better except:

- Friars Road between I-15 North Bound Ramps and Rancho Mission Road (LOS E)
- Fairmount Avenue between I-8 East Bound Off Ramp and Camino Del Rio North (LOS F)

4.2.1.4 Peak Hour Intersection Performance

Table 4.2-2 summarizes the existing peak hour operating conditions for the study intersections. Figures 4.2-2 and 4.2-3 show existing morning and evening peak hour traffic volumes for study intersections. The worksheets used in this analysis are provided in the traffic study technical report (Appendix B) of this EIR.

TABLE 4.2-1
Existing Daily Roadway Segment Conditions

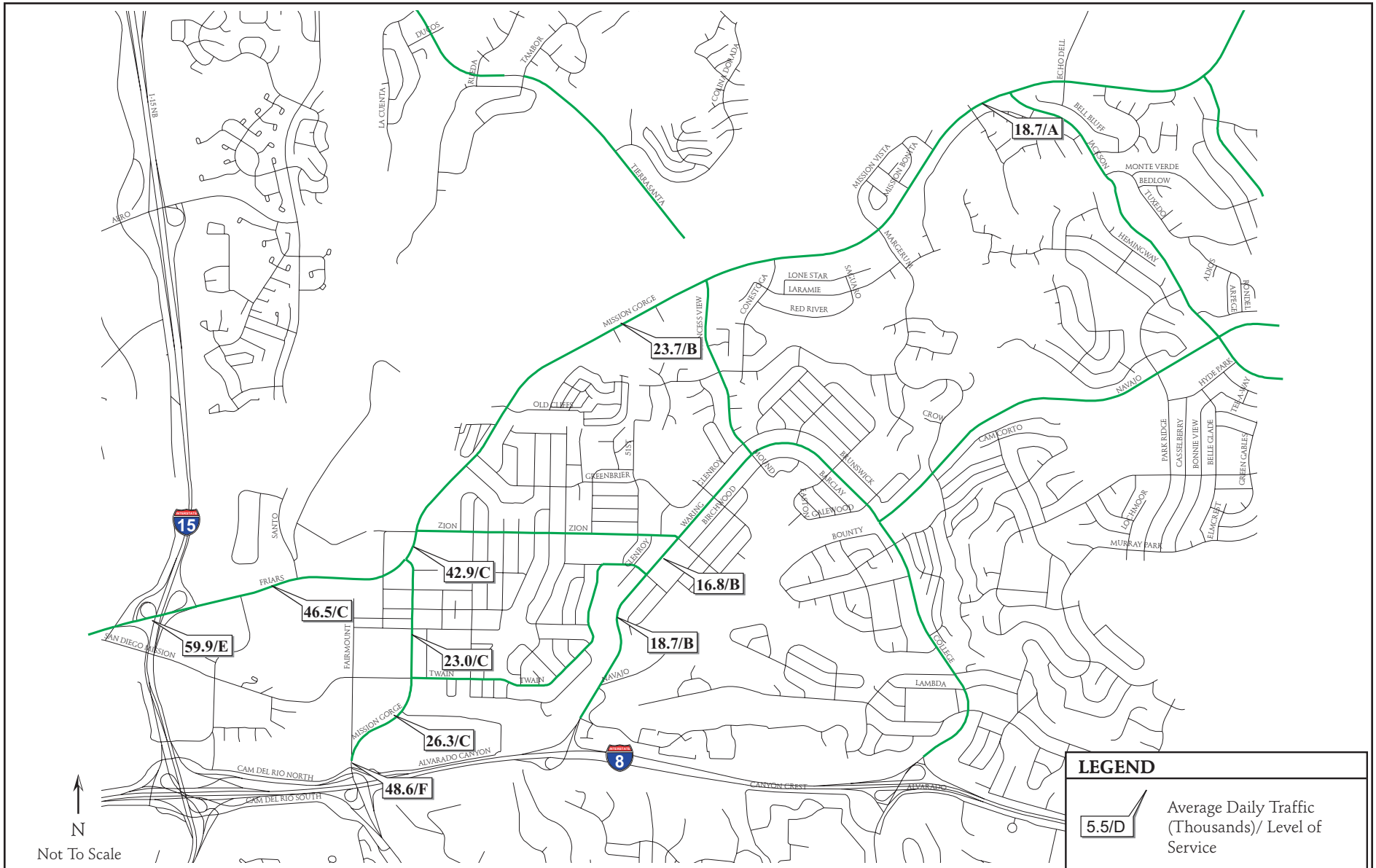
Roadway Segment	Lanes/ Classification	LOS E Capacity	Average Daily Traffic (ADT)	Volume to Capacity Ratio	Level of Service
Friars Road					
I-15 NB Ramps to Rancho Mission Road	6 Lane Prime	60,000	59,881	1.00	E
Rancho Mission Road to Santo Road	6 Lane Prime	60,000	46,477	0.78	C
Fairmount Avenue					
I-8 EB Off Ramp to Camino Del Rio North	4 Lane Major	40,000	48,581	1.22	F
Mission Gorge Road					
Mission Gorge Place to Twain Avenue	4 Lane Major	40,000	26,268	0.66	C
Twain Avenue to Vandever Avenue	4 Lane Major	40,000	23,041	0.58	C
Friars Road to Zion Avenue	6 Lane Prime	60,000	42,915	0.72	C
West of Princess View Drive	5 Lane Prime	50,000	23,717	0.47	B
West of Jackson Drive	6 Lane Major	50,000	18,703	0.37	A
Waring Road					
Zion Avenue to Twain Avenue	4 Lane Major	40,000	16,771	0.42	B
South of Twain Avenue	4 Lane Major	40,000	18,705	0.47	B

Notes: NB = North Bound, EB = East Bound
Source: Katz, Okitsu & Associates, 2004.

TABLE 4.2-2
Existing Peak Hour Intersection Conditions

Intersection	AM Peak Hour		PM Peak Hour	
	Average Intersection Delay (sec.)	Level of Service	Average Intersection Delay (sec.)	Level of Service
1. Friars & I-15 SB Ramps	24.8	C	33.8	C
2. Friars & I-15 NB Ramps	6.7	A	10.5	B
3. Friars & Rancho Mission Rd	18.7	B	16.6	B
4. Friars & Mission Gorge Rd	13.3	B	26.4	C
5. Zion & Mission Gorge Rd	32.0	C	30.2	C
6. Princess View & Mission Gorge Rd	14.5	B	14.9	B
7. Jackson & Mission Gorge Rd	14.7	B	11.8	B
10. Twain & Mission Gorge Rd	30.9	C	38.4	D
11. Fairmont Ave & Mission Gorge Rd	15.8	B	19.2	B
12. Cam. Del Rio/ I-8 WB Off & Fairmount Ave	72.8	E	141.3	F
13. Fairmont Ave & I-8 WB On Ramp*	0.0	A	0.0	A
14. I-8 EB On and Off Ramps & Fairmount Ave	19.8	B	17.5	B
25. Zion & Waring Rd	25.5	C	26.2	C
26. Twain & Waring Rd	15.4	B	13.2	B

Notes: * = Unsignalized Intersection
Source: Katz, Okitzu & Associates, 2004.



SOURCE: Katz, Okitsu & Associates, 2004

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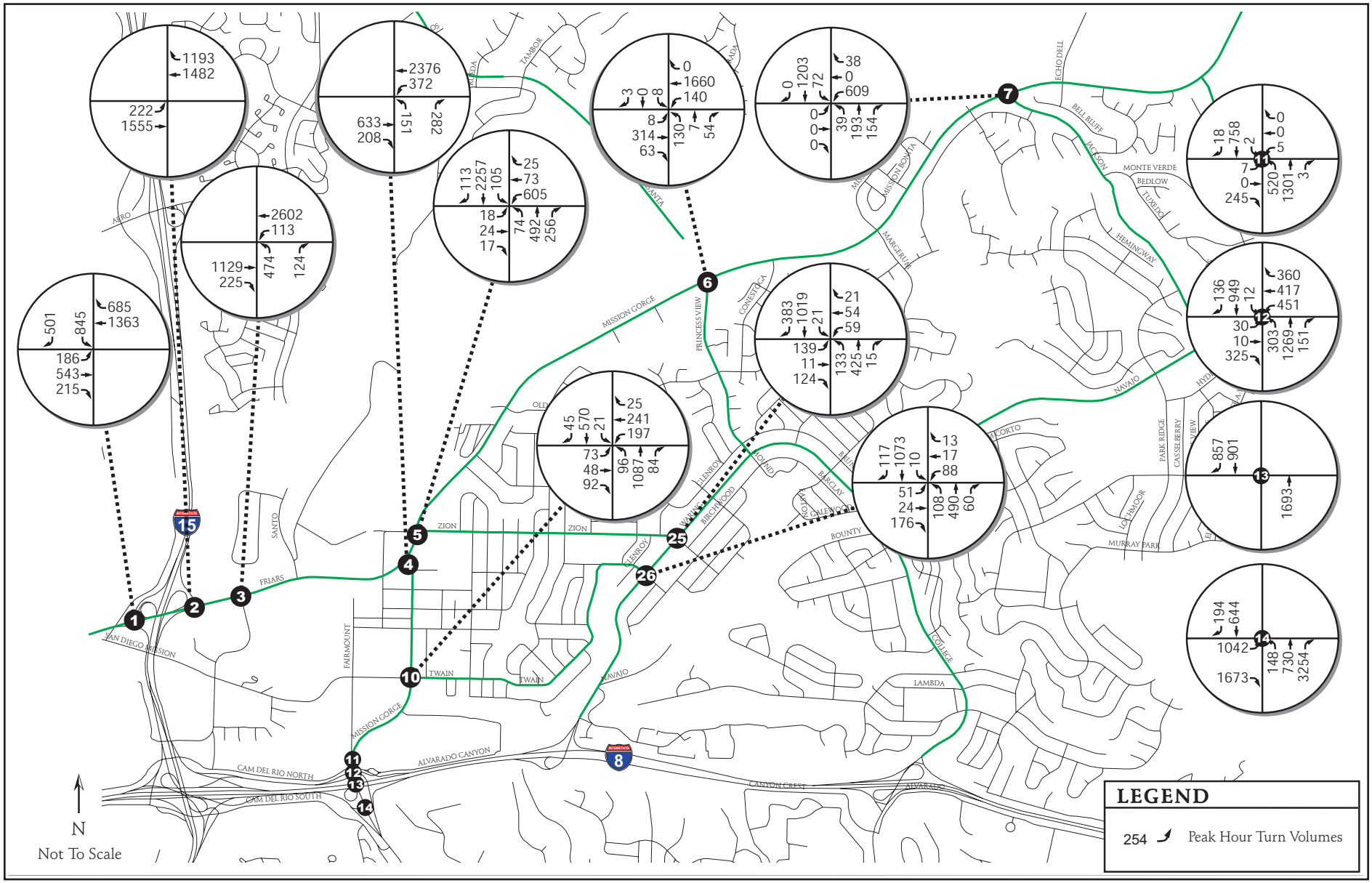
Existing Daily Roadway Segment Conditions

FIGURE 4.2-1



SOURCE: Katz, Okitsu & Associates, 2004

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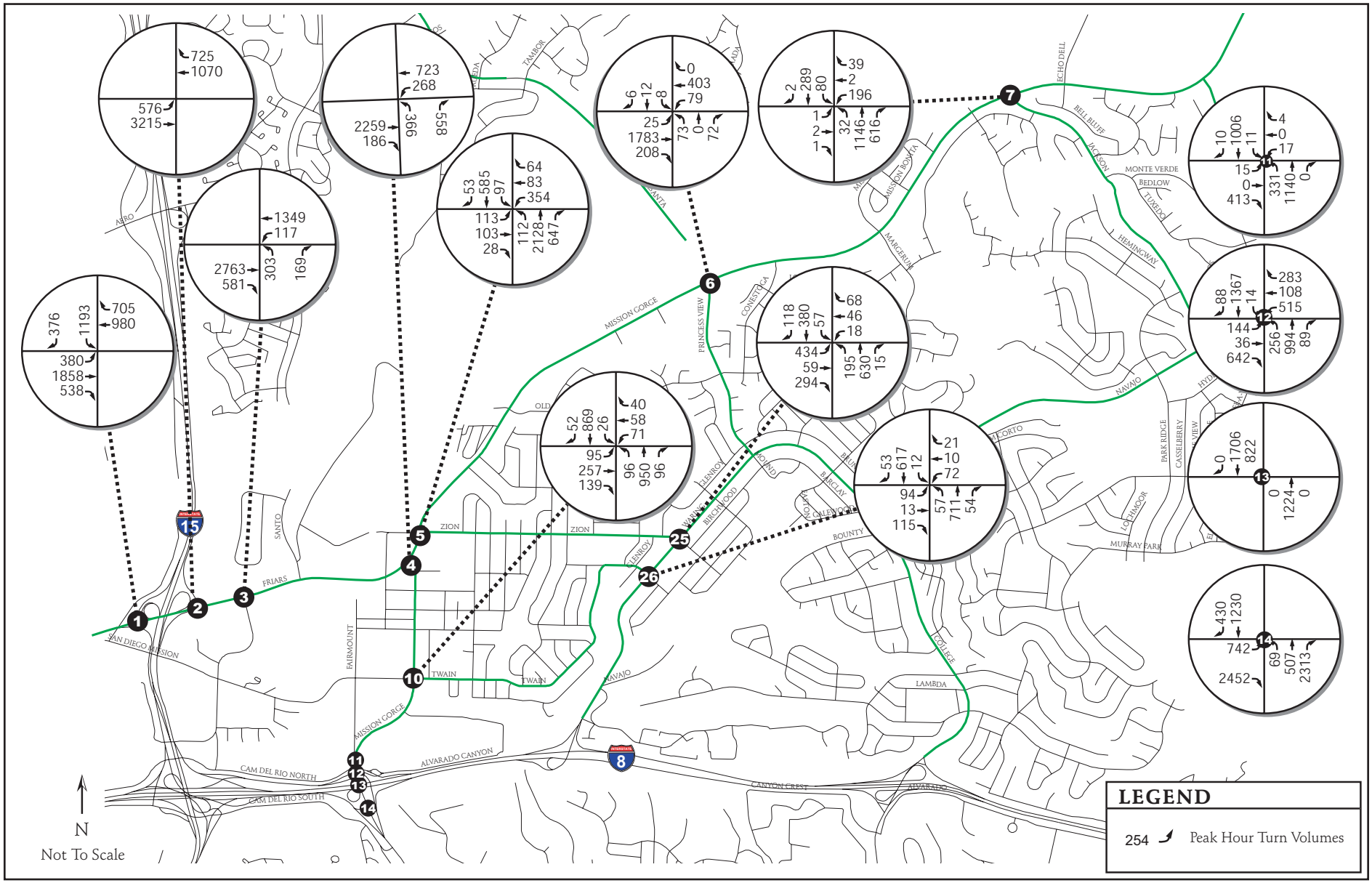
Existing AM Peak Hour Turning Movements

FIGURE

4.2-2



SOURCE: Katz, Okitsu & Associates, 2004

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Existing PM Peak Hour Turning Movements

FIGURE

4.2-3

As shown, all intersections operate at LOS D or better in the morning peak hour except:

- Camino Del Rio/I-8 WB Off & Fairmount Avenue (LOS E).

4.2.2 Impact Threshold

For the purposes of this EIR, a significant impact would occur if the proposed project would:

- *Cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system (i.e., result in a substantial increase in either the number of vehicle trips, the volume to capacity ratio on roads, or congestion at intersections).*

To determine project impacts, the City of San Diego has developed a series of thresholds based on allowable increases in volume-to-capacity ratios, which become more stringent as level of service worsens. Table 4.2-3 summarizes these thresholds.

The acceptable level of service for roadway segments and intersections in San Diego is level of service D. However, for undeveloped areas, the goal is to achieve level of service C. Where roadway segments and intersections operate at LOS D or better, findings of significant impacts may occur, but no mitigation is required. Where the roadway segment is forecast to operate at LOS E or F, and the increase v/c or delay is greater than 0.02 or the delay increases by more than two seconds, the determination of significance (Yes/No) is shown in bold type to indicate a significant project impact.

TABLE 4.2-3
Significant Transportation Impact Measure

Level of Service With Project	Allowable Increase/Decrease Due to Project Impacts*		
	Intersections	Roadway Sections	
	Delay (Sec)	V/C	Speed (MPH)
A	N/A	0.10	5
B	6	0.06	3
C	4	0.04	2
D**	2	0.02	1
E**	2	0.02	1
F**	2	0.02	1

Notes: V/C = Volume/Capacity Ratio

* =If a proposed project's traffic impacts exceed the values shown in the above table, then the impacts are deemed "significant." The project applicant shall identify "feasible mitigations," to bring the facility back to the level previously held by the facility prior to the project's traffic impacts.

** = The acceptable level of service standard for roadways and intersections in San Diego is level of service D. However, for undeveloped locations, the goal is to achieve a level of service C.

Source: City of San Diego Traffic Impact Manual, 1998.

4.2.3 Impact

The proposed action is to redevelop areas within the Navajo Community Planning Area. Future redevelopment activities will be in accordance with the applicable development regulations at the time specific redevelopment activities are proposed (e.g., zoning ordinance). The inherent nature of redevelopment tends to readjust the intensity of land use in the study area. Therefore, existing land use intensities were summarized and then compared to the proposed land use intensities to estimate the change caused by the redevelopment. This net change was used to calculate the increase, or decrease, of traffic in the project area. Any change in current land intensity results in a change of traffic on the surrounding roadway network.

4.2.3.1 Project Trip Generation

Vehicular traffic generation characteristics for projects are estimated based on rates in the City of San Diego's Trip Generation Manual (dated September 1998). This manual provides standards and recommendations for the probable traffic generation of various land uses based upon local, regional and nation-wide studies of existing developments in comparable settings. Appendix C of the traffic technical study (see Volume II, Appendix B) contains excerpts from the trip generation manual used in this analysis. Table 4.2-4 summarizes anticipated trip generation based on existing community plan land use designation. As shown in Table 4.2-4, redevelopment activities according to the existing Community Plan would add 31,606 daily trips to the circulation network with 3,280 trips occurring in the morning peak hour and 4,346 trips occurring during afternoon peak hour. The project impacts are analyzed in the 2030 "Horizon Year" scenario.

4.2.3.2 Project Access

The broad nature of and diversity of land use throughout the redevelopment area necessitates that generalized access points will dictate access throughout the redevelopment area. Project redevelopment in the Grantville Redevelopment Area will take access on the primary, adjacent streets including Friars Road, Mission Gorge Road, Waring Road, Princess View Road, Twain Avenue, Jackson Drive, and Fairmount Avenue.

4.2.3.3 Parking

Adequate parking should be assured by the developers per the San Diego Municipal Code, which establishes parking requirement for development within the City of San Diego.

4.2.3.4 Project Trip Distribution

Trip distribution is the process of identifying the probable destinations, directions, or traffic routes that project related traffic will likely affect. Trip distribution information can be estimated from observed traffic patterns, experience or through use of appropriate travel demand models. Trip distributions for this analysis are derived from both observed patterns and a SANDAG Series 10 Select Zone Analysis. For purposes of this analysis, the Select Zone Analysis was used in conjunction with observed patterns and then split into 18 groups defined by geographic area. A distribution was assumed for each area relative to location. Appendix D of the traffic technical study (see Volume II, Appendix B) shows both the location of the land use groups and the distributions used for each.

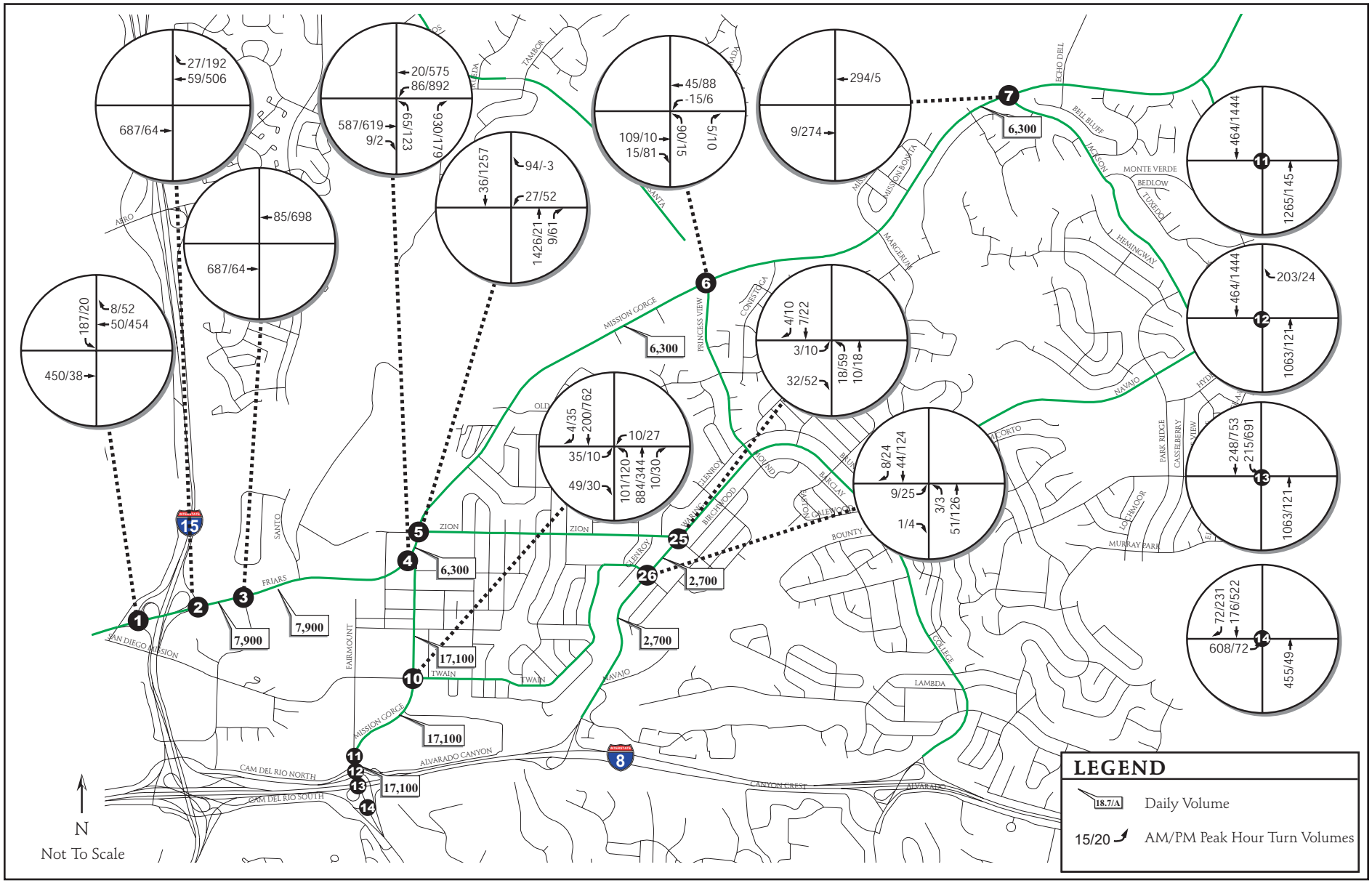
TABLE 4.2-4
Trip Generation for the Proposed Project

Land Use	Intensity	Trip Rate	Per	Daily Trips	AM Trips	In	Out	PM Trips	In	Out
Community Plan Land Use Intensities										
Neighborhood Commercial	-241 KSF	72	KSF	-17,366	-695	-417	-278	-1,910	-955	-955
Community Shopping Center	349 KSF	49	KSF	17,087	513	308	205	1,709	854	854
Specialty Retail/ Strip Commercial	195 KSF	36	KSF	7,018	211	126	84	632	316	316
Industrial (Manufacturing/ Assembly)	4,110 KSF	4	KSF	16,439	3,288	2,959	329	3,288	658	2,630
Industrial (Business Park)	629 KSF	16	KSF	10,057	1,207	398	809	1,207	241	966
Industrial (Small Industrial Park)	371 KSF	15	KSF	5,569	613	551	61	668	134	535
Industrial (Large Industrial Park)	1,036 KSF	8	KSF	8,285	911	820	91	994	199	795
Commercial Office	-169 KSF	20	KSF	-3,161	-411	-370	-41	-443	-89	-354
Institutional (Library)	-69 KSF	20	KSF	-1,379	-28	-19	-8	-138	-69	-69
Residential Single Family	48 DU	10	DU	485	39	8	31	48	34	15
Residential Multi-Family	86 DU	8	DU	686	55	11	44	69	48	21
Religious Facility	-117 KSF	9	KSF	-1,054	-42	-34	-8	-84	-42	-42
Park (Developed)	-19 AC	50	AC	-957	-38	0	0	-77	0	0
Industrial Extraction (Quarry)	-101 AC	100	AC	-10,114	-1,517	-1,062	-455	-1,618	-647	-971
Agriculture	-1 AC	2	AC	-1	0	0	0	0	0	0
Hospital	0 KSF	20	KSF	0	0	0	0	0	0	0
Commercial Recreation (Golf)	2 AC	8	AC	12	1	1	0	1	0	1
TOTAL COMMUNITY PLAN TRIPS				**31,606**	**4,107**	**3,280**	**863**	**4,346**	**682**	**3,741**

Notes: KSF = thousand square feet, DU = dwelling units, AC = acres
Source: City of San Diego Trip Generation Manual, September 1998.

Figure 4.2-4 shows the increase in trips that the proposed project would add to the circulation network using the distributions shown in Appendix D of the traffic technical study.

The Grantville trolley station, located on Alvarado Canyon Road, is under construction as part of the Mission Valley East (MVE) extension of the Blue Line light rail corridor. The station is one of four new stations located along the line. The 5.9-mile MVE extension will connect the Blue and Orange lines, completing a loop that will give San Diegans new mobility and easier access to some of the region's most popular destinations and commercial and employment centers, including San Ysidro, Downtown, Old Town, Mission Valley, La Mesa, El Cajon, and SDSU. Connecting bus service will be offered at the Grantville Station. MTS is scheduled to complete construction on the extension in 2005 with operation beginning in June 2005. This new trolley stop will bring alternative transit opportunities to the project area. This transit opportunity will decrease the amount of vehicle trips generated by the redevelopment. However, the traffic analysis does not assume the five percent reduction for any of the study area. Therefore, the traffic analysis is a conservative estimate of traffic generated by the project.



SOURCE: Katz, Okitsu & Associates, 2004

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Daily and Peak Hour Trip Assignment

FIGURE

4.2-4

4.2.3.5 Horizon Year (Year 2030) Conditions

Horizon Year volumes were collected from the SANDAG Series 10 future forecast model. These volumes are assumed to include redevelopment traffic; therefore, project trips were backed out of the forecasted volumes to estimate base conditions. Horizon Year conditions assume that no circulation network improvements will be in place.

Planned Improvements. Katz, Okitsu & Associates reviewed the City of San Diego Capital Projects Program (CPP) to determine if any funded improvements are planned for the study area. No new CIP improvements are planned for the study area under both the existing and horizon year scenarios. No developer impact fee programs are in place either. In order to be conservative, it has been assumed that no future improvements are in place in the Horizon Year; however, the community plan identifies a number of transportation improvements, as discussed below.

The Navajo Community Plan (adopted in 1982) suggests that Mission Gorge Road be widened to a six-lane facility north of Zion Avenue with no left-turn lanes except at signalized intersections. The existing conditions analysis revealed that the majority of the roadway is a 6-lane facility. However, the segment of Old Cliffs Road to Katelyn Court is a 4-lane roadway and the segment of Katelyn Court to Princess View Drive is a 5-lane roadway. The only non-intersection left-turn lane along the corridor is approximately 150 feet north of Princess View Drive where a southbound left-turn lane serves the existing retail.

The Community Plan also states that Mission Gorge Road be improved to a six-lane major street between Fairmount Avenue and Interstate 8. The existing conditions analysis showed that this has not yet been completed.

The Navajo Community Plan identifies the following circulation improvements. The community plan identifies the extension of Navajo Road east of College Avenue connecting to Waring Road. The community plan specifies that this extension should be designed to parkway standards and limited to a two-lane facility with four lanes at the intersection with College Avenue and Waring Road.

The following improvements are specified in the Tierrasanta Community Plan but are not found in the Navajo Community Plan. These three improvements, which would affect the Navajo Community Plan area, are the extensions of Santo Road, Princess View Drive and Jackson Drive into the Tierrasanta Community. These three extensions have not been included in the analysis.

Daily Roadway Segment Performance. Table 4.2-5 summarizes the horizon year conditions both with and without the project. Figure 4.2-5 graphically presents the results of this analysis.

Table 4.2-5 shows that without the project all segments operate at LOS D or better except:

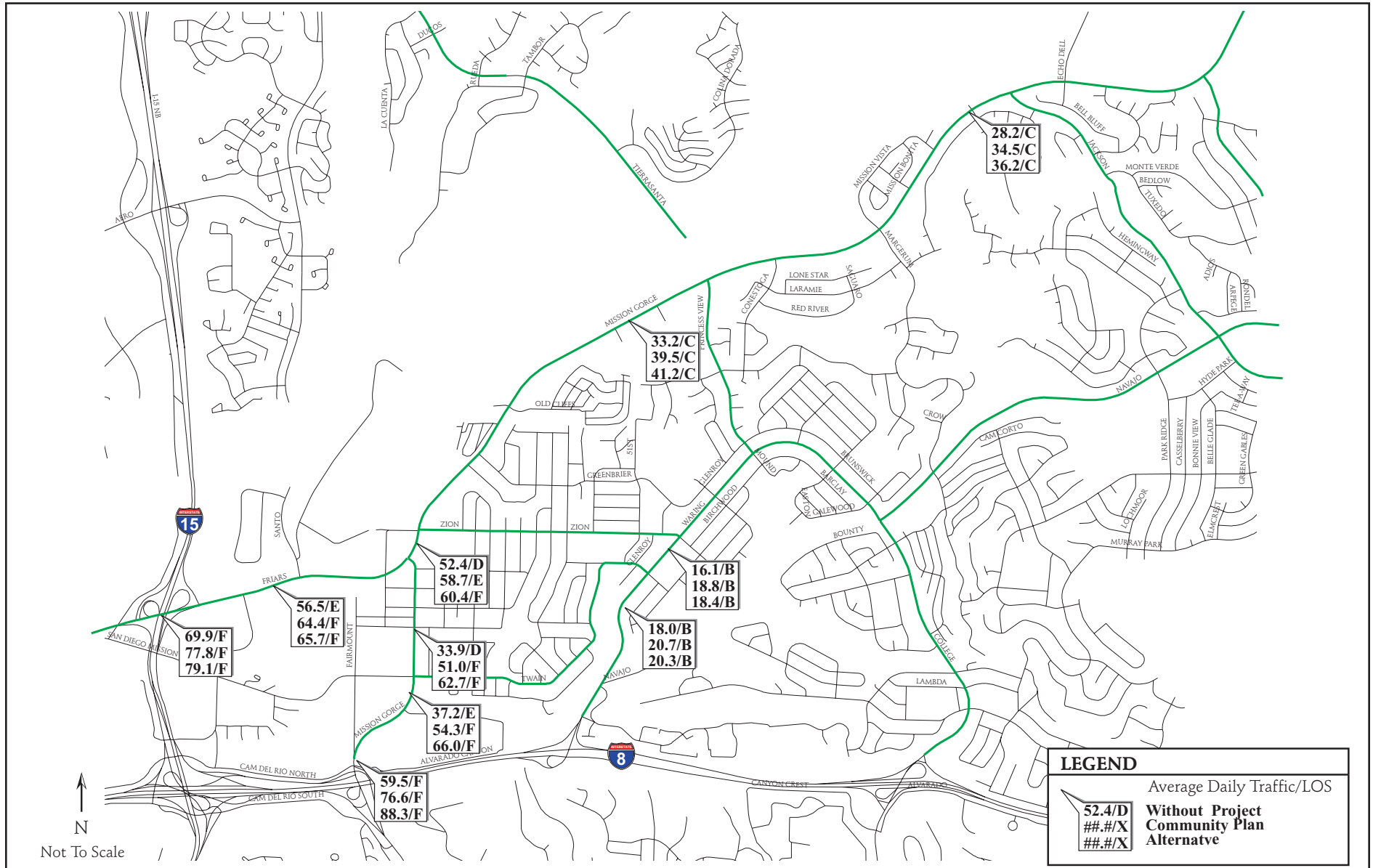
- Friars Road from I-15 North Bound Ramps to Rancho Mission Road (LOS F);
- Friars Road from Rancho Mission Road to Santo Road (LOS E);

TABLE 4.2-5
Horizon Year 2030 Daily Roadway Segment Conditions with the Community Plan Project

Roadway Segment	Lanes/Class	Horizon without Project			Project Added	Horizon with Project			Comparison	
		ADT	V/C	LOS		ADT	V/C	LOS	Increase in V/C	Sig?
Friars Road										
I-15 NB Ramps to Rancho Mission Road	6/Prime	69,000	1.165	F	7,900	77,800	1.297	F	0.132	Yes
Rancho Mission Road to Santo Road	6/Prime	56,500	0.942	E	7,900	64,400	1.073	F	0.132	Yes
Fairmont Avenue										
I-8 EB Off Ramp to Camino Del Rio North	4/Major	59,500	1.488	F	17,100	76,600	1.915	F	0.428	Yes
Mission Gorge Road										
Mission Gorge Place to Twain Avenue	4/Major	37,200	0.930	E	17,100	54,300	1.358	F	0.428	Yes
Twain Avenue to Vandever Avenue	4/Major	33,900	0.848	D	17,100	51,000	1.275	F	0.428	Yes
Friars Road to Zion Avenue	6/Prime	52,400	0.873	D	6,300	58,700	0.978	E	0.105	Yes
West of Princess View Drive	5/Prime	33,200	0.664	C	6,300	39,500	0.790	C	0.126	No
West of Jackson Drive	6/Major	28,200	0.564	C	6,300	34,500	0.690	C	0.126	No
Waring Road										
Zion Avenue to Twain Avenue	4/Major	16,100	0.403	B	2,700	18,800	0.470	B	0.067	No
South of Twain Avenue	4/Major	18,000	0.450	B	2,700	20,700	0.518	B	0.067	No

Notes: V/C = Volume/Capacity Ratio
Sig = Significant

Source: Katz, Okitsu & Associates, 2004



SOURCE: Katz, Okitsu & Associates, 2004

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Horizon Year Daily Roadway Segment Conditions

FIGURE 4.2-5

- Fairmount Avenue from I-8 East Bound Off Ramp to Camino Del Rio North (LOS F); and,
- Mission Gorge Road from Mission Gorge Place to Twain Avenue (LOS E).

With the addition of Community Plan project traffic, the following segments would be significantly impacted:

- Friars Road from I-15 North Bound Ramps to Rancho Mission Road (LOS F);
- Friars Road from Rancho Mission Road to Santo Road (LOS F);
- Fairmount Avenue from I-8 East Bound Off Ramp to Camino Del Rio North (LOS F);
- Mission Gorge Road from Mission Gorge Place to Twain Avenue (LOS F);
- Mission Gorge Road from Twain Avenue to Vandever Avenue (LOS F); and,
- Mission Gorge Road from Friars Road to Zion Avenue (LOS E).

Peak Hour Intersection Performance. Table 4.2-6 summarizes the results of the peak hour intersection performance analysis and the significance of the project's impacts. Figures 4.2-6 and 4.2-7 show the horizon year morning and evening peak hour intersection turning movements without the project. Figures 4.2-8 and 4.2-9 show the horizon year morning and evening peak hour intersection turning movements with the project. Appendix E of the traffic technical study (see Volume II, Appendix B of this EIR) contains the worksheets used in this analysis.

The following intersections would be significantly impacted by the proposed project:

- Friars Road & I-15 South Bound Ramps (PM Peak hour);
- Friars Road & Mission Gorge Road (PM Peak hour);
- Twain & Mission Gorge Road (AM and PM Peak hours);
- Fairmount Avenue & Mission Gorge Road (AM and PM Peak hours);
- Camino Del Rio & I-8 West Bound Off Ramp & Fairmount Avenue (AM and PM Peak hours); and,
- I-8 East Bound On and Off Ramps & Fairmount Avenue (AM Peak hour).

Ramp Meter Analysis. Ramp meter analysis was also conducted for the proposed project. This analysis indicates impacts would occur to the following ramp meter locations:

- Friars Road to I-15 North (AM Peak hour);
- Friars Road to I-15 South (loop) (PM Peak Hour); and,
- Friars Road (HOV) to I-15 North (PM Peak Hour).

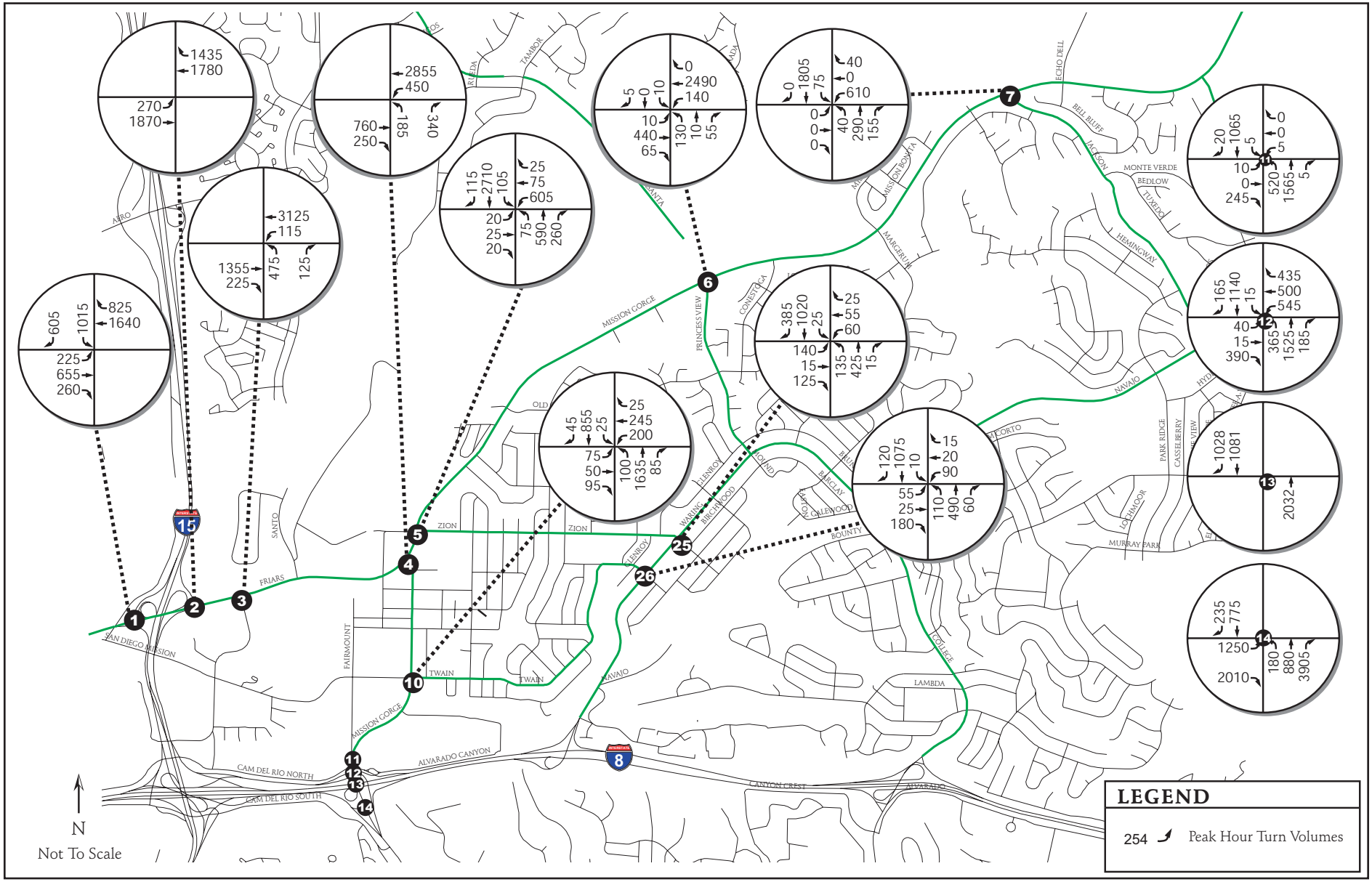
Tables 9a and 9b provided in the traffic technical appendices (see Volume II, Appendix B) summarizes the peak operating conditions for the freeway ramp meters.

TABLE 4.2-6
Year 2030 Peak Hour Intersection Conditions with the Community Plan Project

Intersection	2030 Without		2030 With		Increase in Delay (sec.)	Significant?
	Delay (sec.)	Level of Service	Delay (sec.)	Level of Service		
AM Peak Hour						
1. Friars & I-15 SB Ramps	42.5	D	43.8	D	1.3	No
2. Friars & I-15 NB Ramps	8.3	A	8.2	A	-0.1	No
3. Friars & Rancho Mission Rd	25.1	C	25.8	C	0.7	No
4. Friars & Mission Gorge Rd	17.6	B	48.0	D	30.4	No
5. Zion & Mission Gorge Rd	42.4	D	54.7	D	12.3	No
6. Princess View & Mission Gorge Rd	22.9	C	28.9	C	6.0	No
7. Jackson & Mission Gorge Rd	15.0	B	15.7	B	0.7	No
10. Twain & Mission Gorge Rd	48.5	D	151.5	F	103.0	Yes
11. Fairmont Ave & Mission Gorge Rd	18.6	B	77.0	E	58.4	Yes
12. Cam. Del Rio/ I-8 WB Off & Fairmount Ave	138.0	F	268.1	F	130.1	Yes
13. Fairmont Ave & I-8 WB On Ramp*	0.0	A	0.0	A	0.0	No
14. I-8 EB On and Off Ramps & Fairmount Ave	25.0	C	77.2	E	52.2	Yes
25. Zion & Waring Rd	26.5	C	33.1	C	6.6	No
26. Twain & Waring Rd	15.6	B	15.8	B	0.2	No
PM Peak Hour						
1. Friars & I-15 SB Ramps	67.2	E	86.0	F	18.8	Yes
2. Friars & I-15 NB Ramps	16.5	B	22.3	C	5.8	No
3. Friars & Rancho Mission Rd	24.5	C	24.7	C	0.2	No
4. Friars & Mission Gorge Rd	50.9	D	161.1	F	110.2	Yes
5. Zion & Mission Gorge Rd	40.3	D	50.4	D	10.1	No
6. Princess View & Mission Gorge Rd	24.1	C	22.2	C	-1.9	No
7. Jackson & Mission Gorge Rd	13.3	B	14.5	B	1.2	No
10. Twain & Mission Gorge Rd	70.0	E	177.6	F	107.6	Yes
11. Fairmont Ave & Mission Gorge Rd	25.1	C	133.8	F	108.7	Yes
12. Cam. Del Rio/ I-8 WB Off & Fairmount Ave	222.1	F	387.9	F	165.8	Yes
13. Fairmont Ave & I-8 WB On Ramp*	0.0	A	0.0	A	0.0	No
14. I-8 EB On and Off Ramps & Fairmount Ave	19.8	B	26.4	C	6.6	No
25. Zion & Waring Rd	26.6	C	31.1	C	4.5	No
26. Twain & Waring Rd	13.3	B	13.7	B	0.4	No

Notes: * = Unsignalized Intersection, NB = North Bound, SB = South Bound, EB = East Bound, WB = West Bound

Source: Katz, Okitsu & Associates, 2004



SOURCE: Katz, Okitsu & Associates, 2004

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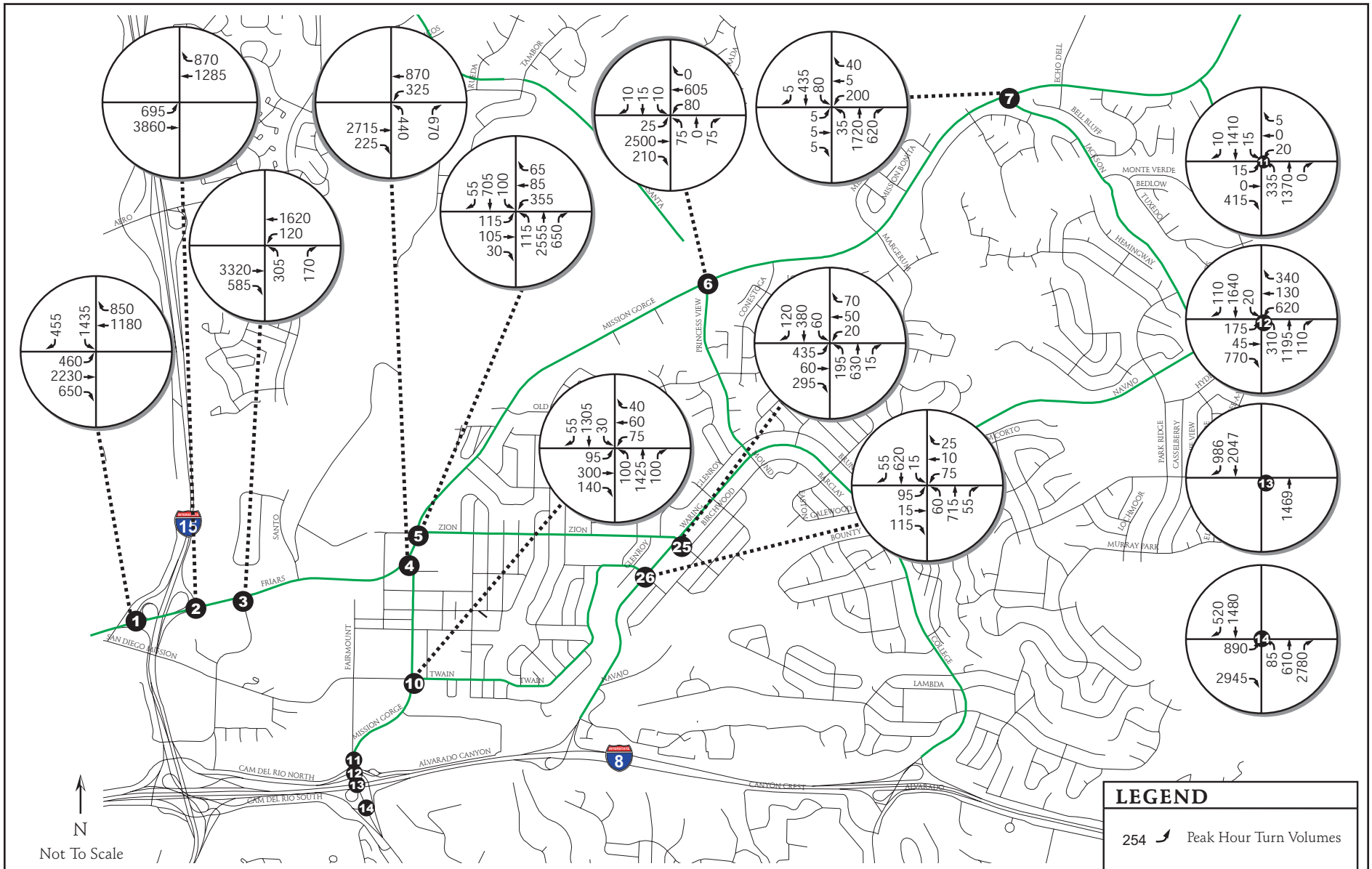
Horizon Year AM Peak Hour Turning Movements without Project

FIGURE 4.2-6



SOURCE: Katz, Okitsu & Associates, 2004

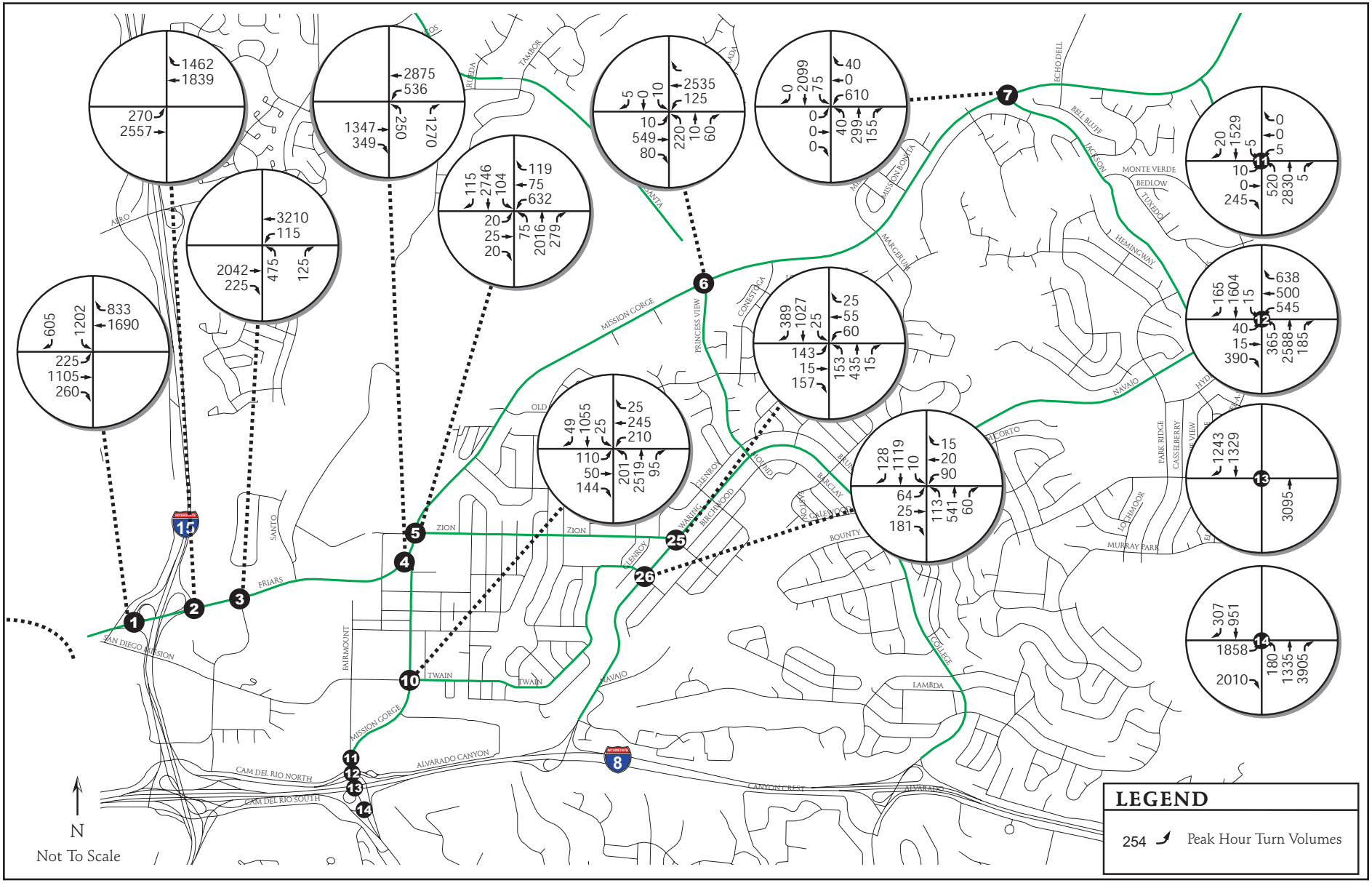
11/29/04

BRG CONSULTING, INC.

Grantville EIR

Horizon Year PM Peak Hour Turning Movements without Project

FIGURE 4.2-7



SOURCE: Katz, Okitsu & Associates, 2004

11/29/04

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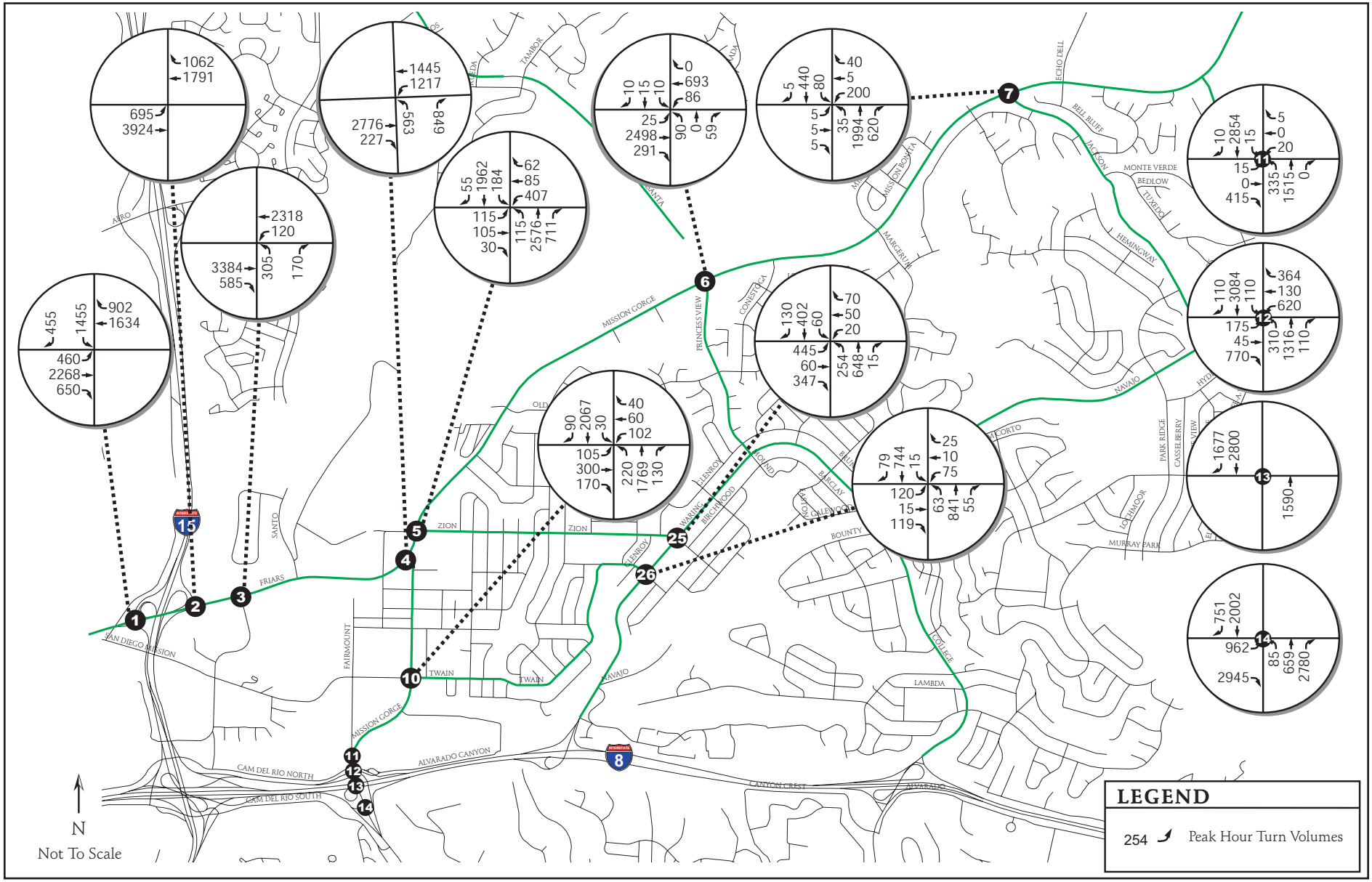
Horizon Year AM Peak Hour Turning Movements with Project

FIGURE 4.2-8



SOURCE: Katz, Okitsu & Associates, 2004

11/29/04

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Grantville EIR

Horizon Year PM Peak Hour Turning Movements with Project

FIGURE 4.2-9

4.2.4 Significance of Impact

Proposed redevelopment activities based on existing community plan land uses are anticipated to add 31,606 daily trips to the circulation network with 3,280 trips occurring in the morning peak hour and 4,346 trips occurring during afternoon peak hour.

The following roadway segments would be significantly impacted:

- Friars Road from I-15 North Bound Ramps to Rancho Mission Road (LOS F);
- Friars Road from Rancho Mission Road to Santo Road (LOS F);
- Fairmount Avenue from I-8 East Bound Off Ramp to Camino Del Rio North (LOS F);
- Mission Gorge Road from Mission Gorge Place to Twain Avenue (LOS F);
- Mission Gorge Road from Twain Avenue to Vandever Avenue (LOS F); and,
- Mission Gorge Road from Friars Road to Zion Avenue (LOS E).

The following intersections would be significantly impacted:

- Friars & I-15 South Bound Ramps (PM Peak hour);
- Friars & Mission Gorge Road (PM Peak hour);
- Twain & Mission Gorge Road (AM and PM Peak hours);
- Fairmount Avenue & Mission Gorge Road (AM and PM Peak hours);
- Camino Del Rio & I-8 WB Off Ramp & Fairmount Avenue (AM and PM Peak hours); and,
- I-8 EB On and Off Ramps & Fairmount Avenue (AM Peak hour).

The following ramp meter locations would be significantly impacted:

- Friars Road to I-15 North (AM Peak hour);
- Friars Road to I-15 South (loop) (PM Peak Hour); and,
- Friars Road (HOV) to I-15 North (PM Peak Hour).

4.2.5 Mitigation Measures

T1 Improvements identified within the Navajo and Tierrasanta Community Plans shall be implemented as sufficient financial resources become available through the establishment of the proposed redevelopment project area. These improvements include:

- Widen Mission Gorge Road to a six-lane facility north of Zion Avenue with no left-turn lanes except at signalized intersections.

- Widen Mission Gorge Road to a six-lane major street between Fairmount Avenue and Interstate 8.
- Improve Mission Gorge Road to a six-lane major street between Fairmount Avenue and Interstate 8.

The Navajo Community Plan (adopted in 1982) suggests the widening of Mission Gorge Road to a six-lane facility north of Zion Avenue with no left-turn lanes except at signalized intersections as well as the widening of Mission Gorge Road to a six-lane major street between Fairmount Avenue and Interstate 8.

Mission Gorge Road north of Zion Avenue is a 6-lane facility for most of its length. However, the segment of Old Cliffs Road to Katelyn Court is a 4-lane roadway and the segment of Katelyn Court to Princess View Drive is a 5-lane roadway. The only non-intersection left-turn lane along the corridor is approximately 150 feet north of Princess View Drive where a southbound left-turn lane serves the existing retail. The Grantville Redevelopment Traffic Impact Analysis analyzed the Mission Gorge Road segments north of Friars Road as 5-lane prime arterials west of Princess View Drive and a 6-lane major arterials for the segments west of Jackson Drive. The widening of Mission Gorge Road at the 4-lane and 5-lane segments would improve the vehicle capacity along these segments. However, the analysis found that no existing or future capacity constraint exists and the roadway segments operate in the worst-case at LOS C.

The Navajo Community Plan also states that Mission Gorge Road be improved to a six-lane major street between Fairmount Avenue and Interstate 8. This improvement has not yet been completed and the roadway is classified as a 4-lane major street. Table 4.2-7 shows that the impact that widening this segment to 6-lanes would have on the Level of Service for the Community Plan scenario. The level of service on this segment would remain an LOS F with this improvement under the Community Plan; and therefore, the impact is considered significant and unavoidable.

TABLE 4.2-7
Horizon Year 2030
Mitigated Daily Roadway Segment Conditions

Street Segment	Horizon with Project (4-Lane Major)			Horizon with Project (6-Lane Major)			Increase in V/C
	ADT	V/C	LOS	ADT	V/C	LOS	
Fairmont Avenue							
I-8 East Bound Off Ramp to Camino Del Rio North	76,600	1.915	F	76,600	1.532	F	-.383

Notes: V/C = Volume/Capacity Ratio
ADT = Average Daily Trip

Source: Katz, Okitsu & Associates, 2004.

4.2.6 Conclusion

The following roadway segments would be significantly impacted as a result of proposed redevelopment activities:

- Friars Road from I-15 North Bound Ramps to Rancho Mission Road (LOS F);
- Friars Road from Rancho Mission Road to Santo Road (LOS F);
- Fairmount Avenue from I-8 East Bound Off Ramp to Camino Del Rio North (LOS F);
- Mission Gorge Road from Mission Gorge Place to Twain Avenue (LOS F);
- Mission Gorge Road from Twain Avenue to Vandever Avenue (LOS F); and,
- Mission Gorge Road from Friars Road to Zion Avenue (LOS E).

The following intersections would be significantly impacted as a result of proposed redevelopment activities:

- Friars & I-15 South Bound Ramps (PM Peak hour);
- Friars & Mission Gorge Road (PM Peak hour);
- Twain & Mission Gorge Road (AM and PM Peak hours);
- Fairmount Avenue & Mission Gorge Road (AM and PM Peak hours);
- Camino Del Rio & I-8 West Bound Off Ramp & Fairmount Avenue (AM and PM Peak hours); and,
- I-8 East Bound On and Off Ramps & Fairmount Avenue (AM Peak hour).

The following ramp meter locations would be significantly impacted as a result of proposed redevelopment activities:

- Friars Road to I-15 North (AM Peak hour);
- Friars Road to I-15 South (loop) (PM Peak Hour); and,
- Friars Road (HOV) to I-15 North (PM Peak Hour).

Implementation of mitigation measures identified in the preceding section will reduce the impact to the extent feasible; however, the impact to traffic circulation will remain significant and unavoidable.

4.3 Air Quality

4.3.1 Existing Conditions

4.3.1.1 Climate

The Grantville Redevelopment Project Area is located within the San Diego Air Basin (SDAB), an area of mild Mediterranean climate, with moderate year-round temperatures. A repetitive pattern of frequent early morning cloudiness, hazy afternoon sunshine, daytime onshore breezes and little temperature change is characteristic of the San Diego climate throughout the year. The average daily maximum in downtown San Diego during the summer is in the upper 70s Fahrenheit (F) with an average daily maximum of 65°F in winter. The thermostat action of the nearby oceanic heat reservoir keeps the daily oscillation of temperature close to 15 degrees. Summer nights in the downtown San Diego area are around 65°F, while early winter mornings drop to the upper 40s F.

Limited rainfall occurs in winter, while summers are often completely dry. An average of ten inches of rain falls each year from November to early April. Year-to-year variations in rainfall amounts are the rule rather than the exception. Rainfall amounts of one-half or twice the annual average are not uncommon. Rain typically falls only 20 days per year with only six days of moderate (0.5" in 24-hours) rainfall per year.

4.3.1.2 Smog and Ozone

Air quality levels tend to decline in some areas of the SDAB during the summer months, when a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cool marine layer and prevents pollutants from dispersing upwards, trapping them within the lower layer. As the pollutants become more concentrated, photochemical reactions occur that produce oxidants, or smog. Abundant sunshine typical in the area furthers this process.

Ozone (O_3) levels in the SDAB have not exceeded the federal one-hour clean air standard since August 30, 1998. O_3, the chief component of smog, is the region's primary criteria pollution problem. This is a vast improvement from the 1970's when O_3 levels in San Diego exceeded the standard about 1 out of 4 days. San Diego has not recorded a Stage I episode (commonly called a Smog Alert) since 1991 and no Stage II episodes since 1979. The number of days exceeding the state standard has decreased dramatically during the past two decades. In 1981, the SDAB exceeded the state standard on 192 days; in 2000, there were 24 days where the state standard was exceeded. The long-term decreases in the number of days the standard has been exceeded reflects the cumulative effect of continued implementation of stationary and mobile source air pollution control programs.

4.3.1.3 Regional and Local Conditions

The SDAB has had a transitional-attainment status of federal standards for O_3. The Basin is either in attainment or unclassified for federal standards of carbon monoxide (CO), sulfur dioxide (SO_2), nitrogen dioxide (NO_2), total suspended particulate matter smaller than ten microns in diameter (PM_{10}), and lead.

The SDAB is also in attainment of state air quality standards for all pollutants with the exception of O_3 and PM_{10}. Air pollutants transported into the Basin from the adjacent South Coast Air Basin (Los Angeles, San Bernardino County, Orange County, and Riverside County) substantially contribute to the non-attainment conditions in the SDAB. Figure 4.3-1 depicts the SDAB in relation to the other air basins in Southern California.

4.3.1.4 Ambient Air Quality

The United States Environmental Protection Agency (USEPA) (under the Federal Clean Air Act of 1970, and amended in 1977) established the National Ambient Air Quality Standards (NAAQS) to define and regulate specific pollutants. Individual states have the option to add additional pollutants, require more stringent compliance, or include different exposure periods, then adopt changes as their own state standards. Because California had established the more stringent California Ambient Air Quality Standards (CAAQS) before the federal action in 1971 and because of the unique air quality problems introduced by the restrictive dispersion meteorology, there is a difference between California and national clean air standards, as seen in Table 4.3-1.

The California Air Resources Board (CARB) monitors ambient air quality at approximately 250 air-monitoring stations across the state. Air quality monitoring stations usually measure pollutant concentrations 10 meters (approximately 30 feet) above ground level; therefore, air quality is often referred to in terms of ground-level concentrations. Ambient air pollutant concentrations in the SDAB are measured at 10 air-monitoring stations operated by the San Diego Air Pollution Control District (SDAPCD).

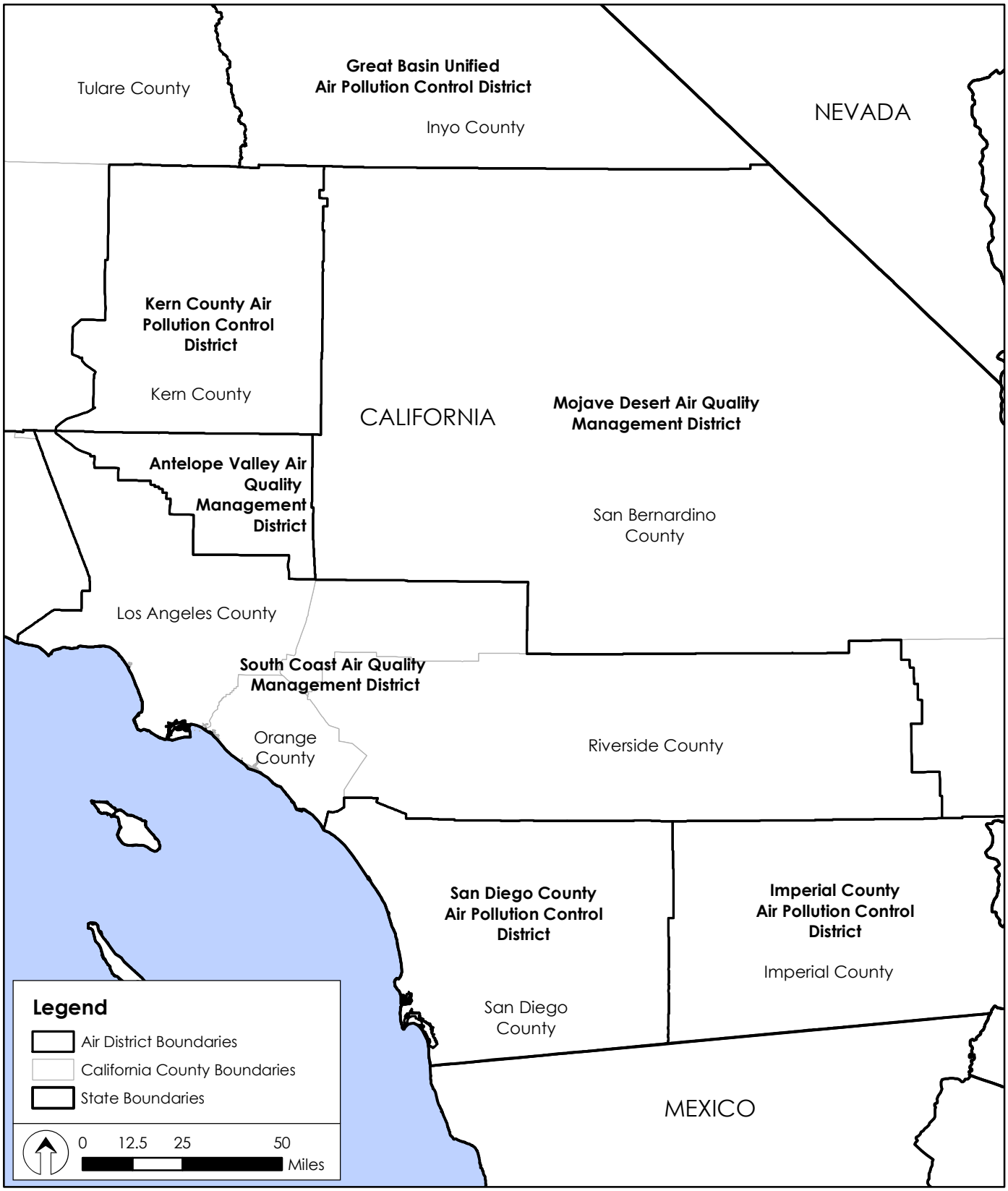
The SDAB is administered by the SDAPCD which maintains air quality monitoring stations throughout San Diego County. The downtown San Diego air quality monitoring station is the station nearest to the Project Area. In general, the City of San Diego has good air quality with the exception of O_3 and PM_{10}. Air quality monitoring data obtained from the downtown San Diego monitoring station indicates that in 2003, the CO, O_3, NO_x, and SO_X levels did not exceed the state standards; however, PM_{10} levels did exceed the state standard 11 days out of the year. Table 4.3-2 depicts the ambient air quality summary for the downtown San Diego monitoring station from 2000 through 2003.

4.3.1.5 Sensitive Receptors

Smog poses a health hazard to the general population, but particularly to the young, the elderly and the sick. Typical health problems attributed to smog include respiratory ailments, eye and throat irritations, headaches, coughing, and chest discomfort. Table 4.3-3 depicts typical health problems associated with O_3 and other pollutants. Certain land uses are considered to be more sensitive to the effects of air pollution, and concentrations of pollutants are referred to as "sensitive receptors." Sensitive receptors located within and adjacent to the Project Area include schools, residential areas, child and senior care facilities, hospital facilities, and parks.

4.3.1.6 Regional Air Quality Strategy Plan

The continued violations of ambient air quality standards in the SDAB, particularly for O_3 in inland foothill areas, requires that a plan be developed outlining the pollution controls that will be undertaken to improve



SOURCE: SanGIS and BRG Consulting, Inc., 2004

10/19/04

BRG CONSULTING, INC.

Grantville EIR

Air District Boundaries

FIGURE

4.3-1

TABLE 4.3-1
California and Federal Ambient Air Quality Standards

Pollutant	Average Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	*Method*[4]	*Primary*[3.5]	*Secondary*[3.6]	*Method*[7]
Ozone (O_3)	1 Hour	0.09 ppm (180 ug/m^3)	Ultraviolet Photometry	0.12 ppm (235 ug/m^3)[8]	Same as Primary Standard	Ultraviolet Photometry
	8 Hour	———		0.08 ppm (157 ug/m^3)[8]		
Respirable Particulate Matter (PM_{10})	24 Hour	50 ug/m^3	Gravimetric or Beta Attenuation	150 ug/m^3	Same as Primary Standard	Inertial Separation and Gravimetic Analysis
	Annual Arithmetic Mean	20 ug/m^3		50 ug/m^3		
Fine Particulate Matter (PM_{25})	24 Hour	No Separate State Standard		65 ug/m^3	Same as Primary Standard	Inertial Separation and Granvimetic Analysis
	Annual Arithmetic Mean	12 ug/m^3	Gravimetric or Beta Attenuation	15 ug/m^3		
Carbon Monoxide (CO)	8 Hour	9.0 ppm (10 mg/m^3)	Non-dispersive Infrared Photometyr (NDIR)	9 ppm (10 mg/m^3)	None	Non-dispersive Infrared Photometry (NDIR)
	1 Hour	20 ppm (23 mg/m^3)		35 ppm (40 mg/m^3)		
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)		———		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	———	Gas Phase Chemiluminescence	0.053 ppm (100 ug/m^3)	Same as Primary Standard	Gas Phase Chemiluminescence
	1 Hour	0.25 ppm (470 ug/m^3)		———		
Lead[9]	30 Days Average	1.5 ug/m^3	Atomic Absorption	———	———	———
	Calendar Quarter	———		1.5 ug/m^3	Same as Primary Standard	High Volume Sampler and Atomic Absorption
Sulfur Dioxide ($S0_2$)	Annual Arithmetic Mean	———	Ultraviolet Fluorescence	0.030 ppm (80 ug/m^3)	———	Spectrophotmetry (Pararosoaniline Method)
	24 Hour	0.04 ppm (105 ug/m^3)		0.14 ppm (365 ug/m^3)	———	
	3 Hour	———		———	0.5 ppm (1300 ug/m^3)	
	1 Hour	0.25 ppm (655 ug/m^3)		———	———	

TABLE 4.3-1
California and Federal Ambient Air Quality Standards (cont'd.)

Pollutant	Average Time	California Standards[1]		Federal Standards[2]		
		Concentration[3]	*Method*[4]	*Primary*[3.5]	*Secondary*[3.6]	*Method*[7]
Visibility Reducing Particles	8 Hour	Extinction of coefficient of 0.23 per kilometer – visibility of ten miles or more (0.07 – 30 miles or more for Lake Tahoe) due to particles when relative humidity is less than 70 percent. Method: Beta Attenuation and Transmittance through Filter Tape.		No Federal Standards		
Sulfates	24 Hour	25 ug/m^3	Ion Chromatography			
Hydrogen Sulfide	1 Hour	0.03 ppm (42 ug/m^3)	Ultraviolet Fluorescence			
Vinyl Chloride[9]	24 Hour	0.01 ppm (26 ug/m^3)	Gas Chromatography			

Notes:
(1) California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter – PM 10, PM 2.5, and visibility reducing particles, are values that are not to be exceeded. All others are not to be equaled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

(2) National standards (other than ozone, particulate matter, and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest eight hour concentration in a year, averaged over three years, is equal to or less than the standard. For PM 10, the 24 hour standard is attained when the expected number of days per calendar year with a 24 hour standard concentration above 150 µg/m^3 is equal to or less than one. For PM 2.5, the 24 hour standard is attained when 98 percent of the daily concentrations, averaged over three years, are equal to or less than the standard. Contact U.S. EPA for further classification and current federal policies.

(3) Concentrations expressed first in units in which it was promulgated. Equivalent units given in parentheses are based upon a reference temperature of 25° C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25° C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

(4) Any equivalent procedure which can be shown to the satisfaction of the ARB to give equivalent results at or near the level of the air quality standard may be used.

(5) National Primary Standards: The levels of air quality necessary, with an adequate margin of safety to protect the public health.

(6) National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

(7) Reference method as described by the EPA. An "equivalent method" of measurement may be used, but must have a "consistent relationship to the reference method" and must be approved by the EPA.

(8) New federal 8-hour ozone and fine particulate matter standards were promulgated by U.S. EPA for further classification and current federal policies.

(9) The ARB has identified lead and vinyl chloride as 'toxic air contaminants' with no threshold level of exposure for adverse health effects determined. These actions allow for the implementations of control measures at levels below the ambient concentrations specified for these pollutants.

Source: California Air Resources Board (7/9/03)

TABLE 4.3-2
Ambient Air Quality Summary
Downtown San Diego Monitoring Station
2000 Through 2003

Year	Carbon Monoxide (CO)		Ozone (O_3)		Nitrogen Dioxide (NO_x)		Sulfur Dioxide (SO_x)		Fine Particulate Matter (PM_{10})	
	Max. 8-hour Concen-tration (ppm)	Days State Standard Exceeded >0.09 ppm 8-hour	Max. 1-hour Concen-tration (ppm)	Days State Standard Exceeded >0.09 ppm 1-hr	Max. 1-hour Concen-tration (ppm)	Days State Standard Exceeded >0.25 ppm 1-hour	Max. 24-hour Concen-tration (ppm)	Days State Standard Exceeded >0.05 ppm 24-hr	Max. 24-hour Concen-tration (ppm)	Days State Standard Exceeded >50 μg/m³ 24-hour
2000	4.6	0	0.188	1	0.117	0	0.010	0	65	4
2001	4.9	0	0.098	1	0.098	0	0.012	0	66	1
2002	3.5	0	0.090	0	0.102	0	0.007	0	85	7
2003	3.9	0	0.075	0	0.111	0	0.008	0	139	11

Notes: hr = hour
Source: California Air Resources Board (CARB) ADAM Ambient Air Quality Inventory.

air quality. In San Diego County, this attainment planning process is embodied in the Regional Air Quality Strategies (RAQS) developed jointly by the SDAPCD and the San Diego Association of Governments (SANDAG).

A plan to meet the federal standard for O_3 was developed in 1994 during the process of updating the 1991 state-mandated plan. This local plan was combined with plans from all other California non-attainment areas having serious O_3 problems and used to create the California State Implementation Plan (SIP). The SIP was adopted by the Air Resources Board (ARB) after public hearings on November 9th through 19th in 1994, and was forwarded to the USEPA for approval. After considerable analysis and debate, particularly regarding airsheds with the worst smog problems, the EPA approved the SIP in mid-1996.

The proposed project is related to the SIP and/or RAQS through the land use and growth assumptions that are incorporated into the air quality planning document. If a proposed project is consistent with the applicable General Plan of the jurisdiction where it is located, then the project presumably has been anticipated within the regional air quality planning process. Such consistency would ensure that the project would not have an adverse regional air quality impact. If the relocation or change of vehicular emission patterns from a proposed project would not create any further unacceptable microscale impacts immediately adjacent to the proposed Project Area, then the project would have a less than significant air quality impact.

4.3.2 Impact Threshold

For purposes of this EIR, a significant air quality impact would occur if implementation of the proposed project would:

- *Conflict or obstruct the implementation of the San Diego Regional Air Quality Strategy (RAQS) or applicable portions of the State Implementation Plan (SIP);*

TABLE 4.3-3
Health Effects Associated with Air Pollutants

Pollutant	Most Relevant Effects
Ozone	(a)Short-term exposures: (1) Pulmonary function decrements and localized lung edema in humans and animals. (2) Risk to public health implied by alterations in pulmonary morphology and host defense in animals; (b) Long-term exposures: Risk to public health implied by altered connective tissue metabolism and altered pulmonary morphology in animals after long-term exposures and pulmonary function decrements in chronically exposed humans; (c) Vegetation damage; (d) Property damage
Carbon Monoxide (CO)	(a) Aggravation of angina pectoris and other aspects of coronary heart disease; (b) Decreased exercise tolerance in persons with peripheral vascular disease and lung disease; (c) Impairment of central nervous system functions; (d) Possible increased risk to fetuses.
Nitrogen Dioxide (NO_2)	(a)Potential to aggravate chronic respiratory disease and respiratory symptoms in sensitive groups; (b) Risk to public health implied by pulmonary and extra-pulmonary biochemical and cellular changes and pulmonary structural changes; (c) Contribution to atmospheric discoloration.
Sulfur Dioxide (SO_2)	(a)Bronchoconstriction accompanied by symptoms which may include wheezing, shortness of breath and chest tightness, during exercise or physical activity in persons with asthma.
Suspended Particulate Matter (PM_{10})	(a)Excess deaths from short-term exposures and exacerbation of symptoms in sensitive patients with respiratory disease; (b) Excess seasonal declines in pulmonary function, especially in children.
Sulfates (SO_2)	(a) Decrease in ventilatory function; (b) Aggravation of asthmatic symptoms; (c) Aggravation of cardio-pulmonary disease; (d) Vegetation damage; (e) Degradation of visibility; (f) Property damage
Lead (Pb)	(a)Increased body burden; (b) Impairment of blood formation and nerve conduction.
Visibility-Reducing Particulates	(a) Visibility impairment on days when relative humidity is less than 70 percent

Notes: ppm = parts per million; hr. = hour; avg. = average, ann. = annual; $\mu g/m^3$ = micrograms per cubic meter

Source: Black & Veatch Corporation, 1999.

- *Violate any air quality standard or contribute substantially to an existing or projected air quality violation;*
- *Result in cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including release emissions which exceed quantitative thresholds for ozone precursors);*
- *Expose sensitive receptors to substantial pollutant concentrations including air toxics such as diesel particulates; or*
- *Create objectionable odors affecting a substantial number of people.*

The San Diego Air Pollution Control District (SDAPCD) provides criteria in Regulation II, Rule 20.2, Table 20-2-1, "Air Quality Impact Assessment (AQIA) Trigger Levels." These were established for air quality permitting purposes for stationary source emissions. These thresholds were not established specifically for CEQA purposes or to assess mobile source emissions. AQIA Trigger levels currently enforced by the County of San Diego are shown quantitatively in Table 4.3-4. However, in lieu of established CEQA thresholds, these standards are utilized for assessment of significance as the standards are compatible with those utilized elsewhere in the State (such as South Coast Air Quality Management District [SCAQMD] standards, etc.). Table 4.3-4 depicts the thresholds for determining significance of this project.

TABLE 4.3-4
SDAPCD Thresholds of Significance for Air Quality Impacts

	Thresholds Significance		
Pollutant	Pounds Per Hour	Pounds Per Day	Tons Per Year
Carbon Monoxide (CO)	100	**550**	100
Oxides of Sulfur (SO_x)	25	**250**	40
Volatile Organic Compounds (VOC's)[(1)]	---	**137**	15
Reactive Organic Gases (ROG's)	---	**137**	15
Oxides of Nitrogen (NO_x)	25	**250**	40
Particulate Matter (PM_{10})	---	**100**	15

Notes 1=VOC thresholds based upon SCAQMD levels per SDAPCE/DPLU requirements (9/01).
Source: SDAPCD Rule 1501, 20.2(d)(2).

4.3.2.1 CO "Hotspot" Thresholds

Exhaust emissions from motor vehicles can potentially cause a direct, localized "hotspot" impact at or near proposed developments or sensitive receptors. CO is a product of incomplete combustion of a fossil fuel; unlike O_3, CO is emitted directly out of a vehicle exhaust pipe and is heavier than air. The optimum condition for the occurrence of a CO hotspot would be cool and calm weather at a congested major roadway intersection with sensitive receptors nearby, and where vehicles are idling or moving at a stop-

and-go pace. Criteria for vehicular emission impacts include significance determinations for intersection and parking structure hotspots.

A significant impact would occur if the CO hotspot analysis of vehicular intersection emissions exposes sensitive receptors to concentrations that are in excess of the following thresholds:

- 20 parts per million (ppm) for 1-hour average, and/or
- 9.0 ppm for 8-hour average.

A proposed project would have a significant air pollution impact associated with parking structures if it would expose sensitive receptors to CO pollution concentrations that are in excess of the following thresholds:

- 50 ppm for 8-hour average for attendants, and
- 9.0 ppm for 8-hour average for the general public.

4.3.3 Impact

4.3.3.1 Construction Impacts

The proposed project is the adoption and implementation of the Redevelopment Plan. The Redevelopment Plan identifies potential redevelopment activities; however, no specific development is proposed. Implementation of the Redevelopment Plan will involve the development of projects throughout the Project Area over the life of the Redevelopment Plan (20 to 30 years). Most redevelopment is anticipated to occur within a 20 to 30 year timeframe, with the rate of development determined by market demand and absorption of commercial, office, and industrial space in the Project Area. Projects will vary from redevelopment of existing parcels with newer commercial and industrial uses, to infrastructure and public utility improvements. Construction associated with redevelopment activities within the Project Area will generate emissions as a result of demolition activity, grading and site preparation, and building construction. Demolition, grading, and site preparation generates primarily PM_{10} emissions (dust) and oxides of nitrogen (NO_X) which are generated by diesel-powered construction vehicles and equipment. The construction of buildings will primarily generate emissions of reactive organic compounds (ROC) as a result of the application of architectural coatings (paint). Future construction activities within the Project Area will be required to comply with City of San Diego development regulations. During future construction activity within the Project Area, federal, state, and local development standards and requirements that are designed to minimize air quality emissions will be implemented through standard development procedures. These measures typically include, but are not limited to the following:

- Water or dust control agents will be applied to active grading areas, unpaved surfaces, and dirt stockpiles as necessary. All soil to be stockpiled over 30 days will be protected with a secure tarp or tackifiers to prevent windblown dust.
- Properly maintain diesel-powered on-site mobile equipment and use gasoline-powered on-site mobile equipment instead of diesel-powered mobile equipment, to the maximum extent possible.
- Wash-off trucks leaving construction sites.

- Replace ground cover on construction sites if it is determined that the site will be undisturbed for lengthy periods.
- Reduce speeds on unpaved roads to less than 15 miles per hour.
- Halt all grading and excavation operations when wind speeds exceed 25 miles per hour.
- Dirt and debris spilled onto paved surfaces at the project site and on the adjacent roadways will be swept or vacuumed and disposed of at the end of each workday to reduce suspension of particulate matter caused by vehicle movement.
- Cover all trucks hauling dirt, sand, soil or other loose material to and from the construction site and/or maintain a two-foot minimum freeboard.
- Use zero emission volatile organic compound (VOC) paints.

The construction emissions associated with the redevelopment activities have the potential to exceed the pollutant emission thresholds. This issue is considered a significant impact. Implementation of Mitigation Measure AQ1 will reduce this impact to a level less than significant. Mitigation Measure AQ1 requires future redevelopment projects to prepare a project-specific air quality analysis to determine if construction emissions will exceed local air quality significance thresholds, and implement measures to reduce these emissions. Future redevelopment projects shall implement federal, state, and local development standards and requirements that are designed to minimize air quality emissions.

4.3.3.2 Long-Term Emissions

Redevelopment of the Project Area according to existing Community Plan land uses will generate an increase of average daily vehicular trips (ADTs) over the 20 to 30 year redevelopment timeframe (refer to Section 4.2 Transportation/Circulation). The increase in ADT reflects the increase in land use intensity and changes in land uses that will occur as properties are redeveloped and vacant parcels are developed. Future land uses will generate mobile emissions associated with project related ADT's and stationary emissions through on-site consumption of energy (i.e., lighting, water, fireplaces, and space heating and cooling). Stationary sources include two types: point and area. Point sources are those which are specific sites that have one or more emission sources at a facility with an identified location (e.g., industrial operations, power plant). Area sources comprise many small emission sources (e.g., homes, offices, and retail shops) which do not have specifically identified locations, but for which emissions can be calculated using per unit standards. Related to stationary emissions, redevelopment activities will generate both point and area source emissions.

In order to determine the mobile and stationary air pollutant emission levels generated by future redevelopment activities, the net increase in land use development under the Community Plan was modeled using the South Coast Air Quality Management District's URBEMIS 2002 for Windows, version 7.5.0 air quality modeling program. Table 4.3-5 identifies the projected air pollutant emissions based on estimated future development, and illustrates that the stationary pollutant emission levels will be below the significance threshold limits for the criteria pollutants. With the exception of SO_x, mobile pollutant emission levels generated by the proposed Redevelopment Plan will exceed the significance threshold limits for the criteria pollutants.

TABLE 4.3-5
Projected Long-Term Air Pollutant Emissions

Pollutant	*Community Plan*			Significance Thresholds	Exceeds Significance Thresholds?
	Stationary Emissions	Mobile Emissions	Total Emissions		
CO	2.28	4,095.15	4,097.43	550	Yes
ROG	6.89	328.21	335.10	137	Yes
NO_X	2.95	376.10	379.05	250	Yes
PM_{10}	0.01	1,148.39	1,148.40	100	Yes
SO_X	0.01	6.58	6.59	250	No

Notes: CO – carbon monoxide
ROG – reactive organic gases
NO_X – nitrogen dioxide
PM_{10} – fine particulate matter
SO_X – sulfur dioxide

Source: BRG Consulting, Inc., URBEMIS 2002 for Windows 7.5.0

Table 4.3-6 identifies the existing stationary and mobile pollutant emissions currently generated within the Project Area. The table is provided to illustrate that existing pollutant emissions also exceed the significance threshold limits. In the long-term, air pollutant emissions are projected to decrease, which reflects the cumulative effect of continued implementation of mobile source air pollution control programs. The effectiveness of air quality management regulations is demonstrated by the historical decreases in pollution concentrations as discussed in Section 4.3.1. The primary reduction factor for these pollutants will be due to federal regulations (the federal Clean Air Act) requiring automobile manufacturers to continually reduce emission levels generated by automobiles. As identified in Table 4.3-5, the net increase in mobile source air emissions generated by redevelopment according to the Community Plan will exceed the emission thresholds of significance as identified in Table 4.3-4. This is considered a significant unavoidable impact. The redevelopment activities are considered to be consistent with the General Plan (Navajo, Tierrasanta, and College Area Community Plans) and future redevelopment activities and associated pollutant emissions have been contemplated in the RAQS Plan. The project will not conflict with implementation of the RAQS Plan.

Implementation of Mitigation Measure AQ2 will reduce the potential increase in air emission levels in the Project Area to the extent feasible. Mitigation Measure AQ2 requires that a project-specific air quality analysis be prepared for each specific redevelopment activity to determine the potential air quality impact associated with the activity and identify measures to reduce air emissions. The following foreseeable future changes to the Project Area and surrounding communities are also anticipated to reduce air pollutant emissions:

TABLE 4.3-6
Existing Air Pollutant Emissions
Year 2004

Pollutant	Existing Land Uses			Significance Thresholds	Exceeds Significance Thresholds?
	Stationary Emissions	Mobile Emissions	Total Emissions		
CO	11.95	20,882.54	20,894.49	550	Yes
ROG	2.00	1,643.14	1,645.14	137	Yes
NO_X	19.69	2,023.21	2,042.90	250	Yes
PM_{10}	0.05	1,582.07	1,582.12	100	Yes
SO_X	0.00	15.97	15.97	250	No

Notes: CO – carbon monoxide
ROG – reactive organic gases
NO_X – nitrogen dioxide
PM_{10} – fine particulate matter
SO_X – sulfur dioxide

Source: BRG Consulting, Inc., URBEMIS 2002 for Windows 7.5.0

- Implementation of roadway infrastructure improvements may provide better operational efficiency and alternative travel routes.
- The expansion of mass transit opportunities, including the San Diego Trolley line and trolley station in the Project Area and surrounding communities.

While the air pollution reduction measures and policies identified above and vehicle technological advancements will reduce CO, ROG, and NO_x emissions, mobile air quality impacts will remain significant and unavoidable.

4.3.3.3 Odor

The inhalation of volatile organic compounds causes smell sensations in humans. There are four primary ways in which these odors can affect human health:

- The VOCs can produce toxicological effects;
- The odorant compounds can cause irritations in the eye, nose, and throat;
- The VOCs can stimulate sensory nerves that can cause potentially harmful health effects; and,
- The exposure to perceived unpleasant odors can stimulate negative cognitive and emotional responses based on previous experiences with such odors.

Future redevelopment activity could generate emissions that are known to produce odorous conditions. However, sources of odor generation that would be anticipated due to future redevelopment activity (such as diesel emissions due to construction, roofing material application, etc.) are not expected to result in a significant impact. Odor generation as a result of construction activity would be intermittent and

would terminate upon completion of the construction phase of a redevelopment project. In the long-term, the project does not propose any specific uses that would generate odors, and future activities would be required to comply with City of San Diego and APCD regulations that control odor emissions. No significant odor impact is anticipated from future redevelopment activities.

4.3.3.4 CO Hotspots

Redevelopment activities within the Project Area have the potential to generate traffic on area roadways and increase the exposure of sensitive receptors to carbon monoxide (CO) levels in excess of state and federal standards. The potential for CO "hot spots" or places where CO concentrations exceed applicable standards, to impact sensitive receptors, such as residences, hospitals, and schools is a primary concern. CO hotspots typically occur in areas where there is a poor level of service on a roadway and vehicles are idling at congested intersections. These hotspots occur mostly in the early morning hours when winds are stagnant, temperatures are relatively low, and ambient CO concentrations are elevated. Table 4.3-7 depicts the intersections that were identified by the traffic analysis to perform at LOS E or below. Vehicles idling at these intersections could create CO hot spots which may impact sensitive receptors in the vicinity of the intersections.

TABLE 4.3-7
Poorly Operating Intersections

Intersections	Level of Service
Friars & I-15 south bound ramps	F
Friars & Mission Gorge Road	F
Twain & Mission Gorge Road	F
Fairmont Avenue & Mission Gorge Road	F
Camino Del Rio & I-8 west bound off-ramp & Fairmont Avenue	F
I-8 east bound on- and off-ramps & Fairmont Avenue	E

Source: Katz, Okitsu & Associates, 2004.

The Level of Service indicated for each of these intersections is for the Year 2030 traffic conditions. Therefore, air quality impact analyses required as part of Mitigation Measure AQ2 will need to include an analysis of the potential CO Hot Spot concentrations utilizing CALINE-4 (or equivalent) line dispersion modeling. This model calculates the highest possible CO concentrations from worst-case wind angle and factors micro-climate conditions, geometrics of the intersection, distance to the receptor, etc.

4.3.3.5 Regional Air Quality Strategy

A project that is consistent with the applicable General Plan of the jurisdiction in which it is located has been anticipated within the regional air quality planning process (i.e., the RAQS Plan). Consistency with the RAQS Plan will ensure that the project does not have an adverse impact on regional air quality.

The Redevelopment Plan is consistent with the Navajo, Tierrasanta and College Area Community Plan land uses as no community plan amendment is proposed; therefore, the project is consistent with the goals and policies of the RAQS.

4.3.4 Significance of Impact

A. Short-term

Future construction activities will result in a significant short-term air quality impact.

B. Long-term

A significant and unavoidable air quality impact has been identified associated with future mobile related air pollutant emissions.

4.3.5 Mitigation Measures

AQ1 A project-specific air quality analysis shall be prepared for future redevelopment projects to determine the emissions associated with construction activities and identify measures to reduce air emissions. In addition, future redevelopment projects shall implement appropriate federal, state, and local development standards and requirements that are designed to minimize short-term construction related air quality emissions. These measures typically include, but are not limited to the following:

- Apply water or dust control agents to active grading areas, unpaved surfaces, and dirt stockpiles as necessary. Protect all soil to be stockpiled over 30 days with a secure tarp or tackifiers to prevent windblown dust.
- Properly maintain diesel-powered on-site mobile equipment and use gasoline-powered on-site mobile equipment instead of diesel-powered mobile equipment, to the maximum extent possible.
- Wash-off trucks leaving construction sites.
- Replace ground cover on construction sites if it is determined that the site will be undisturbed for lengthy periods.
- Reduce speeds on unpaved roads to less than 15 miles per hour.
- Halt all grading and excavation operations when wind speeds exceed 25 miles per hour.
- Sweep or vacuum dirt and debris spilled onto paved surfaces at the project site and on the adjacent roadways and dispose of these materials at the end of each workday.
- Cover all trucks hauling dirt, sand, soil or other loose material to and from the site and/or maintain a two-foot minimum freeboard.
- Use zero emission volatile organic compound (VOC) paints.

AQ2 A project-specific air quality analysis shall be prepared for each subsequent redevelopment project in order to assess the potential air quality impact associated with the activity and identify measures to reduce air emissions. The air quality assessment shall include an evaluation of construction-related emissions, stationary and mobile source emissions, including CO "hot spot" emissions, if necessary. Measures shall be identified and implemented on a project-by-project basis to reduce emissions to the extent feasible (e.g., solar heating and energy, building design and efficient heating and cooling systems, maximize opportunities for mass transit, etc.)

4.3.6 Conclusion

4.3.6.1 Short-Term

Mitigation Measure AQ1 will reduce the significant short-term air quality impact associated with project-specific construction activities to a level less than significant.

4.3.6.2 Long-Term

The long-term air quality impact is considered significant and unavoidable, as there are no technologies available to reduce the future vehicular related air pollutant emissions to a level less than significant. However, the project is consistent with the General Plan (Navajo, Tierrasanta and College Area Community Plans) and no conflict with implementation of the RAQS is anticipated.

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4.4 Noise

Existing and future roadway noise levels were modeled based on traffic data and forecasts discussed in Section 4.2. Roadway Noise Model Worksheets (Wieland Associates, November 2004) are provided in Volume II, Appendix D of this EIR.

4.4.1 Existing Conditions

The Grantville Redevelopment Project Area is located in an urbanized area of the City of San Diego. The primary sources of noise within the Project Area are caused by vehicular traffic on the roadways within and adjacent to the Project Area and by day-to-day operations of existing uses including commercial and industrial operations and sand and gravel operations. The Project Area also experiences noise events as a result of periodic overflight of aircraft.

4.4.1.1 Effects of Noise on People

Noise is generally defined as an unwanted sound. Whether a sound is considered a noise depends on the source of the sound, the loudness relative to the background noise, the time of day, the surroundings, and the listener. The difference in people's reaction to different noises or sounds is explained by the perceived noisiness, or how undesirable the sound is to the people in the vicinity of the source. An unwanted sound may be extremely irritating although it is not unreasonably loud. The areas most vulnerable to the harmful effects of sound are residential locations, particularly at night. All human activities can be adversely affected by excessive noise.

Noise can result in speech interference, and disrupt activities at home and work, sleep patterns, and recreational pursuits. The long-term effects of excessive noise exposure are physical as well as psychological. Physical effects may include headaches, nausea, irritability, constriction of blood vessels, changes in heart and respiratory rate, and increased muscle tension. Prolonged exposure to high noise levels may result in hearing damage. Psychological effects may result from the stress and irritability associated with a change in sleeping patterns due to excessive noise.

4.4.1.2 Measures of Noise Level And Noise Exposure

The standard unit of measurement of the loudness of sound is the decibel (dB). The decibel measurement is logarithmic; meaning each increase in one decibel is a tenfold increase in the level of noise. Typically, the quietest environmental conditions (extreme rural areas with extensive shielding) yield sound levels of approximately 20 dB. Normal speech has a sound level of approximately 60 dB. Sound levels above120 dB roughly correspond to the threshold of pain and would be associated with sources such as jet engine noise. The minimum change in sound level that the human ear can detect is approximately 3 dB. A change in sound level of 10 dB is usually perceived by the average person as a doubling (or halving) of the sounds loudness.

Because the human ear is not equally sensitive to sound at all frequencies, a special frequency-dependent rating scale has been devised to relate noise to human sensitivity. The method commonly used to quantify environmental sounds consists of determining all of the frequencies of a sound according to a weighting

system that reflects the nonlinear response characteristics of the human ear. This is called "A" weighting, and the decibel level measured is called the A-weighted sound level (or dBA). Community noise levels are measured in terms of the A-weighted decibel.

4.4.1.3 Community Noise Equivalent Level (CNEL)

A given level of noise may be more or less tolerable depending on the duration of exposure experienced by an individual. There are numerous measures of noise exposure, which consider not only the A-weighted sound level variation of the noise but also the duration of the disturbance. The State Department of Aeronautics and the California Commission of Housing and Community Development have adopted the community noise equivalent level (CNEL) measure of noise exposure. This measure considers an energy averaged A-weighted noise level for the evening hours, 7:00 p.m. to 10:00 p.m. increased by 5dB, and the late evening and early morning hourly noise levels, 10:00 p.m. to 7:00 a.m., increased by 10dB. The daytime noise levels are combined with these weighted levels and then averaged, on an energy basis, to obtain a CNEL value.

4.4.1.4 City of San Diego General Plan

Table 4.4-1 depicts the land use-noise compatibility matrix of the City of San Diego General Plan. This matrix identifies various land use types and the average CNEL that is considered compatible for that use. Compatible is defined as the average noise level such that indoor and outdoor activities associated with the land use may be carried out with essentially no interference from noise.

4.4.1.5 City of San Diego Noise Ordinance

Table 4.4-2 depicts the City of San Diego noise standards for various land use types. The Noise Ordinance states that "It shall be unlawful for any person to cause noise by any means to the extent that the one-hour average sound level exceeds the applicable limit given in Table 4.4-2, at any location in the City of San Diego on or beyond the boundaries of the property on which the noise is produced. The noise subject to these limits is that part of the total noise at the specified location that is due solely to the action of said person."

Construction noise in the City of San Diego is regulated by Division 4, Section 59.5.0404 of the Municipal Code, which states that:

- It shall be unlawful for any person, between the hours of 7:00 PM of any day and 7:00 AM of the following day, or on legal holidays as specified in Section 21.04 of the San Diego Municipal Code, with exception of Columbus Day and Washington's Birthday, or on Sundays, to erect, construct, demolish, excavate for, alter or repair any building or structure in such a manner as to create disturbing, excessive or offensive noise unless a permit has been applied for and granted beforehand by the Noise Abatement and Control Administrator.
- It shall be unlawful for any person, including the City of San Diego, to conduct any construction activity so as to cause, at or beyond the property lines of any property zoned residential, an average sound level greater than 75 decibels during the 12-hour period from 7:00 AM to 7:00 PM.

TABLE 4.4-1
City of San Diego Noise Land Use Compatibility Chart

LAND USE	Annual Community Noise Equivalent Level in Decibels 50	55	60	65	70	75	
1. Outdoor Amphitheaters (may not be suitable for certain types of music).							
2. Schools, Libraries							
3. Nature Preserves, Wildlife Preserves							
4. Residential-Single Family, Multiple Family, Mobile Homes, Transient Housing							
5. Retirement Home, Intermediate Care Facilities, Convalescent Homes							
6. Hospitals							
7. Parks, Playgrounds							
8. Office Buildings, Business and Professional							
9. Auditoriums, Concert Halls, Indoor Arenas, Churches							
10. Riding Stables, Water Recreation Facilities							
11. Outdoor Spectator Sports, Golf Courses							
12. Livestock Farming, Animal Breeding							
13. Commercial-Retail, Shopping Centers, Restaurants, Movie Theaters							
14. Commercial-Wholesale, Industrial Manufacturing, Utilities							
15. Agriculture (except Livestock), Extractive Industry, Farming							
16. Cemeteries							

COMPATIBLE The average noise level is such that indoor and outdoor activities associated with the land use may be carried out with essentially no interference from noise.

INCOMPATIBLE The average noise level is so severe that construction costs to make the indoor environment acceptable for performance of activities would probably be prohibitive. The outdoor environment would be intolerable for outdoor activities associated with the land use.

Source: City of San Diego (1989).

TABLE 4.4-2
Sound Level Limits

Land Use Zone	Time of Day	One-Hour Average Sound Level (decibels)
All R-1 residential	7 AM to 7 PM 7 PM to 10 PM 10 PM to 7 AM	50 45 40
All R-2 residential	7 AM to 7 PM 7 PM to 10 PM 10 PM to 7 AM	55 50 45
R-3, R-4, and all other residential	7 AM to 7 PM 7 PM to 10 PM 10 PM to 7 AM	60 55 50
All commercial	7 AM to 7 PM 7 PM to 10 PM 10 PM to 7 AM	65 60 60
Manufacturing all other industrial including agriculture and extractive industry	Anytime	75

Source: City of San Diego Municipal Code, Chapter 5 – Public Safety, Morals, and Welfare, Article 9.5 – Noise Abatement and Control, Division 4 – Limits (59.5.0404).

4.4.1.6 State Of California Noise Insulation Standards

The California Commission on Housing and Community Development officially adopted the Noise Insulation Standards (Title 24) in 1974. The regulations became effective on August 22, 1974. The ruling states the "interior CNEL attributable to exterior sources shall not exceed an annual CNEL of 45 dB in any habitable room." Additionally, the Commission specified that multi-family residential buildings or structures to be located within exterior CNEL contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, rapid transit line, or industrial noise source shall require an acoustical analysis showing that the building has been designed to limit intruding noise to the level prescribed (interior CNEL of 45 dB).

4.4.1.7 Existing Noise Levels

The primary and most consistent noise in a majority of the Project Area is generated by vehicular traffic. Other noise generators in the Project Area include the commercial, industrial, and sand and gravel extraction land uses. Table 4.4-3 provides the ambient noise levels measured at four locations within the Project Area. Figure 4.4-1 depicts the location of the ambient noise level measurement locations. Location 1 is located on the southern portion of Subarea B within an industrial land use. Residential land uses are nearby and to the south. Location 2 is located on the eastern side of Subarea C within a front yard of a residential unit. Commercial uses within Subarea C are located adjacent and to the south. Location 3 is located in the central portion of Subarea A along Mission Gorge Road within a commercial/office land use. Location 4 is located in the southern portion of Subarea A in a parking lot adjacent to Alvarado Canyon Road within a commercial/office land use. As identified in Table 4.4-3, the lowest ambient noise level of 65.8 dB(A) was measured at location 3 and the highest ambient noise level of 74.4 dB(A) was measured at location 4.

TABLE 4.4-3
Ambient Noise Level Measurements

Monitoring Locations	Measured Noise Levels, Leq (dB(A))
#1 – 6955 Mission Gorge Road, adjacent to front yard	71.3
#2 – 5205 Waring Road, front yard	67.1
#3 – 6206 Mission Gorge Road, front yard	65.8
#4 – In parking lot adjacent to 4460 Alvarado Canyon Road	74.4

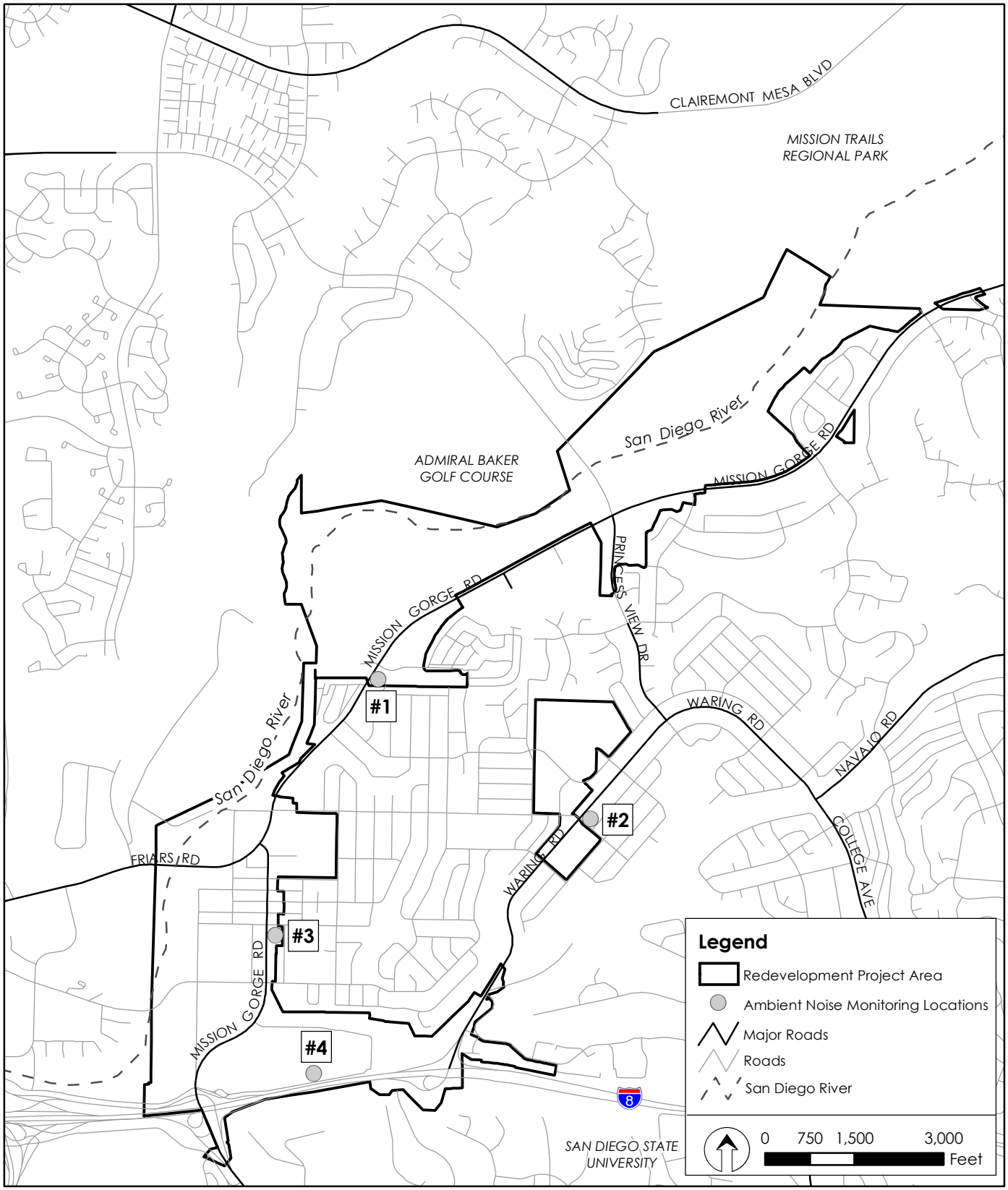
Note: Leq is the equivalent (i.e., average) noise level during the measurement period.
Source: Wieland Associates, 2004

Existing roadway noise levels were modeled based on existing traffic levels on Project Area roadways, as discussed in Section 4.2. Table 4.4-4 summarizes the existing vehicular noise levels at 50 feet from the centerline of major roadways serving the Project Area. Streets with the highest volumes of traffic generate the highest noise levels.

TABLE 4.4-4
Existing Roadway Noise Levels

Road Segments	Noise Level (50 Feet from near lane centerline, CNEL)
Friars Road	
I-15 Northbound ramps to Rancho Mission Road	75.0
Rancho Mission Road to Santo Road	74.0
Fairmount Avenue	
I-8 Eastbound ramp to Camino Del Rio North	74.0
Mission Gorge Road	
Mission Gorge Place to Twain Avenue	67.0
Twain Avenue to Vandever Avenue	66.5
Friars Road to Zion Avenue	72.5
West of Princess View Drive	70.0
West of Jackson Drive	71.0
Waring Road	
Zion Avenue to Twain Avenue	66.5
South of Orcutt Avenue	66.5

Source: Wieland Associates, 2004



SOURCE: Wieland Associates, SanGIS and BRG Consulting, Inc., 2004

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Ambient Noise Monitoring Locations

FIGURE 4.4-1

Figure 4.4-2 depicts the roadway noise contour distances to the 60dBA, 65dBA, 70dBA, and 75dBA in the Project Area. Through the central portion of Subarea A, along Mission Gorge Road, the noise level at 50 feet from the near lane centerline ranges from a low of 66.5dBA to a high of 72.0dBA. The existing land uses in this area consist of commercial and industrial. Based on City of San Diego noise standards, the commercial and industrial land uses fronting Mission Gorge Road currently experience noise levels below the maximum acceptable exterior noise level of 75dBA.

In Subarea B, along Mission Gorge Road, the noise level at 50 feet from the near lane centerline ranges from a low of 70.0dBA to a high of 71.0dBA. Industrial land uses dominate this area and based on City noise standards, the industrial land uses experience noise levels below the City's noise standard of 75dBA for industrial uses. It should be noted that from Jackson Drive west, through Subarea B to Zion Avenue, there are pockets of residential dwelling units (not included in the Project Area) that are currently exposed to noise levels above the City's exterior noise standard of 65dBA.

In Subarea C, along Waring Road, the noise level at 50 feet from the near lane centerline is 66.5dBA. Based on City of San Diego noise standards, the commercial land uses fronting Waring Road currently experience noise levels below the maximum acceptable exterior noise level of 75dBA. The existing park and school uses are currently exposed to noise levels that slightly exceed the City's exterior noise standard of 65dBA. The residential dwelling units located adjacent to Subarea C are currently exposed to noise levels above the City's exterior noise standard of 65dBA.

4.41.8 Stationary Noise Sources

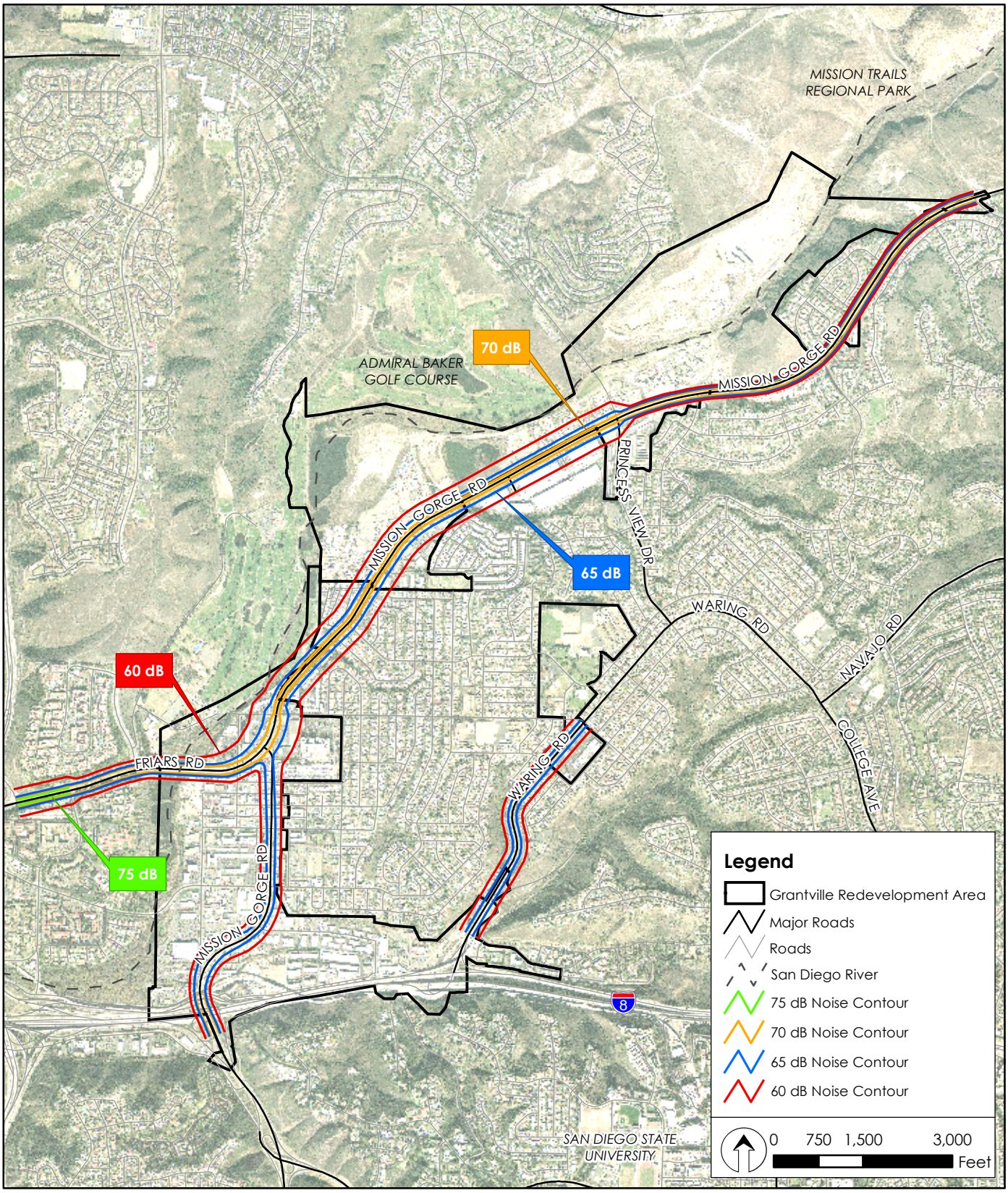
Commercial, industrial, sand and gravel extraction, residential, schools, and public services generate noise within the Project Area. Stationary noise sources can be generated by delivery vehicles, communication systems (e.g., a drive-thru restaurant speaker), car alarms, car door shutting, and mechanical equipment (e.g., air conditioning or heating units).

Sand and Gravel Extraction. In Subarea B, a sand and gravel extraction operation creates noise during extraction and hauling activities. The noise level from this particular operation has not been measured, although, some of the activities below, such as truck deliveries and vehicles moving in parking areas represent an example of the type of noise that is generated at the sand and gravel operation.

Truck Deliveries. Light industrial and commercial uses often result in truck deliveries of goods to and from the site. Large 18 wheel trucks generate a maximum noise level of 86 dBA at a distance of 50 feet.

Vehicle Movements in Parking Areas. Parking lot activities primarily generate two sources of noise, break squeal and door slams. Of these, door slamming is the more intense source of noise. Car door slamming can result in maximum noise levels of approximately 86 dBA at 50 feet.

Trash Pickup and Compacting. Trash pickup and compacting are additional sources of noise near commercial uses. Typical noise levels range from 80 to 85 dBA at 50 feet during the raising, lowering and



SOURCE: Landiscor (1/14/04), Wieland Associates, SanGIS and BRG Consulting, Inc., 2004

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Existing Noise Contours

FIGURE 4.4-2

compacting operations. A typical trash pickup takes approximately three minutes. The higher noise levels occur during about one-half of the operation.

Trash compactors. Many commercial uses require the use of on-site trash compactors. On-site trash compactors typically generate a noise level of 78 to 82 dBA at a distance of 50 feet.

Parking Lot Sweepers. Parking lot sweepers are typically required for commercial uses in order to reduce the potential for pollution-laden runoff from the site. Sweepers typically generate noise levels that range from 74 to 79 dBA at a distance of 50 feet.

School Yard. The level of noise generated by a school is greatest with respect to playground activity. Depending on the number of children, noise levels from a playground range between 62 dBA (100 children in a playground) to 72 dBA (900 children in a playground).

4.4.1.9 Sensitive Receptors

As identified in Section 4.1, Land Use, the Project Area predominantly consists of commercial, industrial, public service, and undeveloped land. Very few sensitive receptors exist in the Project Area. However, a majority of the Project Area is located within the Navajo community, which is comprised of primarily residential uses. These residential uses are located immediately adjacent to the Project Area. A large hospital and medical office complex is located east of the Friars Road/Mission Gorge Road intersection.

4.4.2 Impact Threshold

4.4.2.1 Temporary Construction Noise

Temporary construction noise that exceeds 75 dB during the 12-hour period from 7:00 a.m. to 7:00 p.m. at or beyond the property lines of any property zoned residential would be considered significant. Additionally, where temporary construction noise would substantially interfere with normal business communication, or affect sensitive receptors, such as day care facilities, a significant noise impact may be identified. This threshold is based on City of San Diego Municipal Code Section 59.5.0404.

4.4.2.2 Traffic Noise

The City of San Diego has established noise standards for various land uses. As identified in Table 4.4-5, the City's standard for the exterior noise level compatible with residential and other noise-sensitive uses is 65 dBA CNEL or less for usable outdoor living space (including patios, balconies, courtyards, seating areas, children's play areas, picnic and barbeque areas, and swimming pools). The maximum acceptable exterior noise level is 70 dBA CNEL for offices, churches, business and professional uses, and 75 dBA CNEL for commercial, retail, industrial, and outdoor spectator sport uses.

The California Administrative Code, Title 24 – Noise Insulation Standards, requires that the interior noise level of all new multi-family residences, hotels, and motels do not exceed 45 dBA CNEL. If the exterior noise level

TABLE 4.4-5
Traffic Noise Significance Thresholds
(dBA CNEL)

Structure or Proposed Use that would be impacted by Traffic Noise	Interior Space	Exterior Usable Space[1]	General Indication of Potential Significance
Single-family detached	45 dB	65 dB	Structure or outdoor usable area[2] is less than 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than 7500
Multi-family, schools, libraries, hospitals, day care, hotels, motels, parks, convalescent homes.	Development Services Department (DSD) ensures 45 dB pursuant to Title 24	65 dB	
Offices, Churches, Business, Professional Uses.	N/A	70 dB	Structure or outdoor usable area[2] is less than 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than or equal to 20,000
Commercial, Retail, Industrial, Outdoor Spectator Sports Uses.	N/A	75 dB	Structure or outdoor usable area[2] is < 50 feet from the corner of the closest (outside) lane on a street with existing or future ADTs greater than or equal to 40,000

Notes: 1= If a project is currently at or exceeds the significance thresholds for traffic noise described above and noise levels would result in less than a 3 dB increase, then the impact is not considered significant.
2 =Exterior usable areas do not include residential front yards or balconies, unless the areas such as balconies are part of the required usable open space calculation for multi-family units.

Source: 1) City of San Diego Acoustical report Guidelines (December 2003) and 2) City of San Diego Progress Guide and General Plan (transportation Element).

exceeds 60 dBA CNEL, Title 24 requires the preparation of a site specific acoustical analysis showing that the proposed design will limit interior noise to 45 dBA CNEL or less. The City of San Diego also applies Title 24 standards to single-family residences. In addition, the City of San Diego Planning Department's policy is that interior noise levels for business and professional office uses are not to exceed 50 dBA CNEL.

4.4.2.3 Long-term Stationary Noise

Noise levels generated at the property line which exceed the City's Noise Ordinance Standards (see Table 4.4-1) would be considered a significant impact.

4.4.3 Impact

4.4.3.1 Construction Noise

The implementation of the proposed Redevelopment Project will result in additional private and public development within the Project Area, which will generate noise from construction activity. The construction phase of the redevelopment activities may require demolition of existing structures on the site, grading activities, and construction of new structures. The noise produced by the grading, excavation, demolition, and construction activity is not expected to be substantially annoying to the established residential areas adjacent to the Project Area. This will be the case for activities occurring during the daytime working hours (7:00 a.m. to 7:00 p.m.) specified in City of San Diego Municipal Code Section 59.5.0404. However, extended construction activity (after 7:00 p.m.) would cause considerable annoyance. Construction

activity also has the potential to impact sensitive receptors as well as certain businesses adjacent to individual construction sites. Table 4.4-6 identifies the typical construction equipment noise levels at a distance of 50 feet.

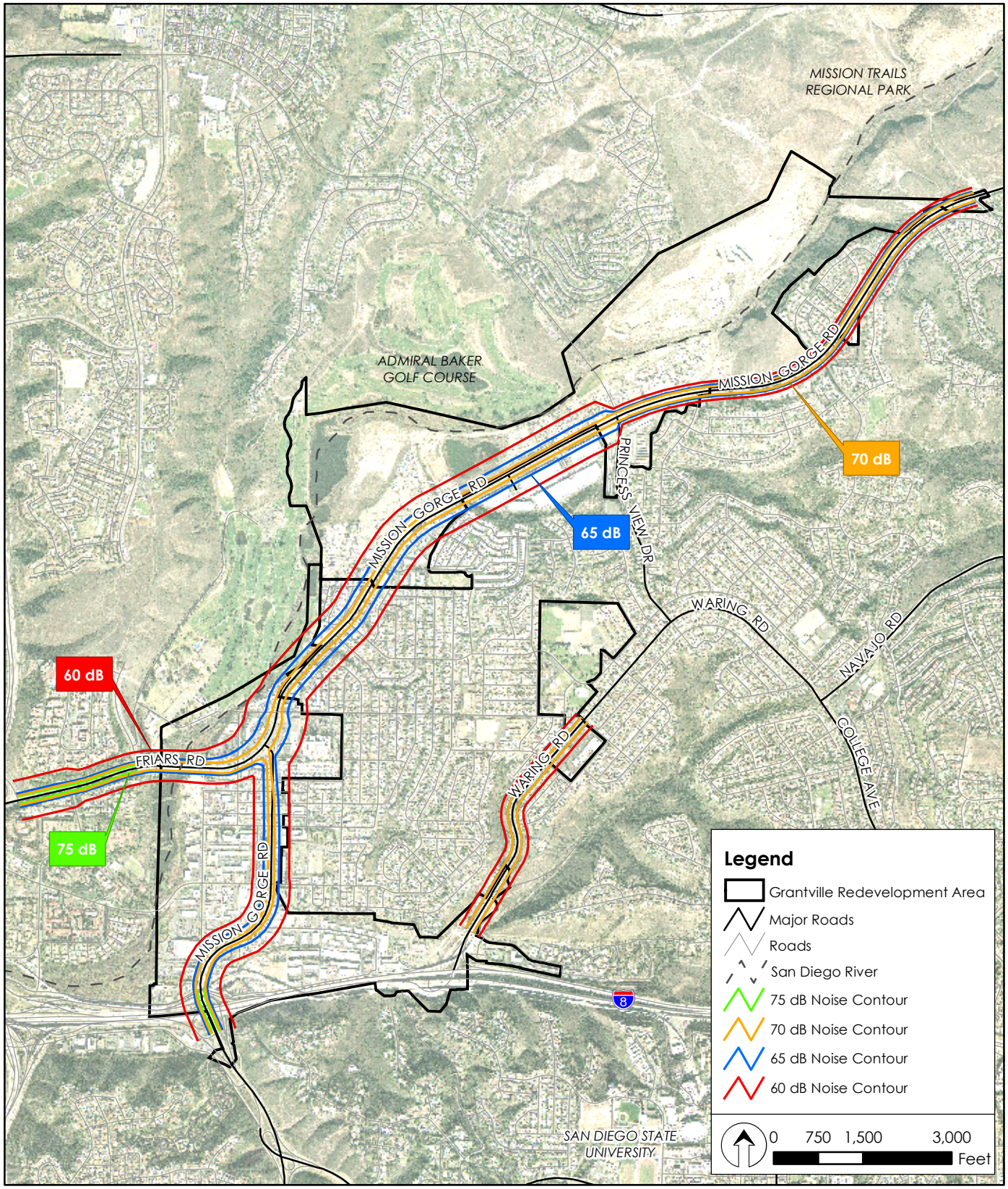
The potential noise levels that could be generated during demolition and construction for redevelopment activities is considered a significant, short-term impact. Implementation of Mitigation Measure N1 will reduce the impact to a level less than significant. Mitigation Measure N1 requires construction activities within the Project Area to comply with existing City regulations, including limits on hours of construction and maximum noise levels from construction equipment.

4.4.3.2 Traffic Noise Exposure

A version of the highway traffic noise prediction model developed by the Federal Highway Administration was used to model existing traffic noise levels and to predict future traffic noise levels. This model predicts noise levels based on traffic volumes, speeds, traffic mix, and distance from the roadway. Traffic volumes are obtained from the traffic report provided in Appendix B of this EIR, and as discussed in Section 4.2.

Table 4.4-7 summarizes the future noise levels from roadways serving the Project Area. Figure 4.4-3 depicts the modeled future noise contours along roadway segments within the Project Area. As shown, increased future traffic volumes will result in increased noise levels along some roadway segments. The net increase in noise levels over existing levels as a result of project-generated traffic is projected to range from no change to 3.5dBA CNEL at a distance of 50 feet from the near lane centerline along major streets. The largest increase in noise levels will occur along Mission Gorge Road where the noise level increase will be approximately 3.5 dBA CNEL between Mission Gorge Place and Twain Avenue and Twain Avenue and Vandever Avenue. Future noise levels will range between 66.5dBA CNEL to 76.5dBA CNEL within 50 feet of the near lane centerline within the Project Area.

Noise levels on roadways adjacent to most commercial and industrial uses would continue to be within acceptable levels. Assuming that existing land uses redevelop consistent with Community Plan land uses, there would be single-family and multi-family residential uses near I-8 as well as Mission Gorge Road. In terms of future residential development in the Project Area, the CNEL at 50 feet from the centerline of the roadway will be above the 65 CNEL threshold for residential uses, with noise levels ranging between 66.5 dBA CNEL and 76.5dBA CNEL. Future land use types, including residential have the potential to be exposed to traffic noise levels that currently exceed and in the future will continue to exceed City standards. Depending on the type and location of the particular redevelopment project, measures may need to be incorporated into the project to ensure both exterior and interior noise standards are met. In many cases, existing land uses that already experience noise levels that exceed City standards would be replaced with new uses that are constructed of modern building materials and meet modern code requirements, thereby the number of structures in the Project Area that experience interior noise levels above City standards would actually be reduced. However, because the Project Area is located adjacent to roadways that carry large volumes of traffic, future redevelopment activities may be exposed to noise levels that exceed City standards or Title 24 standards. Implementation of Mitigation Measure N2 will reduce the impact to a level less than significant. Mitigation Measure N2 requires redevelopment activities within the Project Area



SOURCE: Landiscor (1/14/04), Wieland Associates, SanGIS and BRG Consulting, Inc., 2004

12/2/04

BRG CONSULTING, INC.

Grantville EIR

Future Roadway Noise Contours

FIGURE 4.4-3

TABLE 4.4-6
Construction Equipment Noise Levels

Equipment Item	Range of Noise Level at 50 Feet	Nominal Noise Level, Leq, at 50 Feet
Earthmoving		
Backhoes, 200 HP	71 to 93 dB(A)	85 dB(A)
Berm Machine, 100 HP	74 to 84 dB(A)	80 dB(A)
Dozers	72 to 96 dB(A)	86 dB(A)
Front Loaders, 300 HP	71 to 96 dB(A)	82 dB(A)
Grader	73 to 95 dB(A)	85 dB(A)
Paver	80 to 92 dB(A)	89 dB(A)
Roller, 180 HP	78 to 84 dB(A)	79 dB(A)
Scrapers	73 to 95 dB(A)	88 dB(A)
Tractors, 200 HP	72 to 96 dB(A)	84 dB(A)
Trencher, 80 HP	76 to 86 dB(A)	82 dB(A)
Truck/Trailer, 200 HP	70 to 92 dB(A)	82 dB(A)
Truck: 125 HP, 150 HP	76 to 85 dB(A)	80, 82 dB(A)
Materials Handling		
Concrete Mixer	70 to 90 dB(A)	85 dB(A)
Concrete Pump	74 to 84 dB(A)	82 dB(A)
Crane, Moveable: 50 HP, 200 HP, 400 HP	75 to 95 dB(A)	76, 80, 83 dB(A)
Derrick	86 to 89 dB(A)	88 dB(A)
Forklift, 40 HP	68 to 82 dB(A)	80 dB(A)
Side Boom, 200 HP	80 to 90 dB(A)	85 dB(A)
Water Truck, 500 HP	79 to 88 dB(A)	84 dB(A)
Stationary Equipment		
Boiler, 1600 HP	79 to 85 dB(A)	82 dB(A)
Compressors: 100 HP, 200 HP	68 to 87 dB(A)	78, 81 dB(A)
Generators: 20 HP, 400 HP, 1300 HP	69 to 81 dB(A)	74, 81, 84 dB(A)
Pumps: 25 HP, 200 HP, 350 HP	60 to 80 dB(A)	73, 76, 80 dB(A)
Impact Equipment		
Compactor, 20 HP	84 to 90 dB(A)	86 dB(A)
Jack Hammers	75 to 104 dB(A)	88 dB(A)
Pile Drivers (Peak Level)	90 to 104 dB(A)	101 dB(A)
Pneumatic Tools	82 to 88 dB(A)	86 dB(A)
Rock Drills	90 to 105 dB(A)	98 dB(A)
Steam Boiler (Pile Driver)	83 to 92 dB(A)	88 dB(A)
Other Equipment		
Saws	67 to 92 dB(A)	78 dB(A)
Vibrators	69 to 80 dB(A)	76 dB(A)
Welding Machines: 50 HP, 80 HP	76 to 85 dB(A)	80, 82 dB(A)

Source: Wieland Associates, 1999.

TABLE 4.4-7
Future Noise Levels (CNEL)

Segments	Future With Project (50 feet from Near Lane Centerline)	Change Due to Project
Friars Road		
I-15 Northbound ramps to Rancho Mission Road	76.5	+1.5
Rancho Mission Road to Santo Road	75.5	+1.5
Fairmount Avenue		
I-8 Eastbound ramp to Camino Del Rio North	76.5	+2.5
Mission Gorge Road		
Mission Gorge Place to Twain Avenue	70.5	+3.5
Twain Avenue to Vandever Avenue	70.0	+3.5
Friars Road to Zion Avenue	74.5	+1.5
West of Princess View Drive	72.0	+2.0
West of Jackson Drive	73.5	+2.5
Waring Road		
Zion Avenue to Orcutt Avenue	66.5	No change
South of Orcutt Avenue	67.0	+0.5

Source: Wieland Associates, 2004

to comply with applicable City regulations at the time projects are proposed, Title 24-Noise Insulation Standards, and implementation of site-specific building techniques to attenuate noise. The site-specific building techniques include using pedestrian oriented planning techniques, incorporating architectural design strategies which reduce the exposure of noise-sensitive receptors to vehicular noise, incorporating noise barriers or walls into development adjacent to noise sources, and modification of construction building elements as necessary to provide sound attenuation.

4.4.3.3 Stationary Noise

Redevelopment activities within the Project Area may result in increases in stationary noise as a result of operations of commercial, industrial, and public service uses. As described in the Existing Conditions section, there are many potential sources of stationary noise including, but not limited to, truck deliveries, parking lot activity, mechanical equipment, and street or parking lot cleaning. Noise compatibility of redevelopment activities will be addressed on a case-by-case basis as specific redevelopment activities are proposed. This review includes an assessment of compatibility with surrounding uses. Since redevelopment activities may include noise-generating land uses located in vicinity of noise-sensitive uses, this impact is considered significant. All redevelopment activities will need to comply with the City of San Diego sound level limits as identified in Table 4.4-1. Implementation of Mitigation Measure N2 will reduce the impact to a level less than significant.

4.4.4 Significance of Impact

4.4.4.1 Construction Noise

The potential noise generated during demolition and construction of future redevelopment activities is considered a significant, short-term impact.

4.4.4.2 Traffic Noise Exposure

The noise generated by roadways that carry large volumes of traffic may expose future redevelopment to noise levels that exceed City standards and/or Title 24 standards and is considered a significant impact.

4.4.4.3 Stationary Noise

Redevelopment activities within the Project Area may result in increases in stationary noise as a result of operations of commercial, industrial, and public service uses. Since redevelopment activities may include noise-generating land uses located in vicinity of noise-sensitive uses, this impact is considered significant.

4.4.5 Mitigation Measures

N1 Future redevelopment activities shall be subject to applicable City regulations regarding control of construction noise at the time the redevelopment activity is constructed. Applicable regulations include limiting the days and hours of construction and limiting the maximum noise levels from construction equipment. City regulations that address construction noise include:

- The construction hours for construction activities on sites adjacent to residences, schools, and other noise-sensitive uses shall be reviewed and adjusted as determined appropriate by the City.
- To the extent feasible, construction activities will be screened from adjacent noise-sensitive land uses, with solid wood fences or other barriers as determined appropriate by the City.
- All construction equipment, fixed or mobile, operating within 1,000 feet of dwelling unit(s), school, hospital, or other noise-sensitive land use shall be equipped with properly operating and maintained muffler exhaust systems.
- Stockpiling and vehicle staging areas shall be located as far as practical from occupied dwellings, classrooms, and other sensitive receptors.
- Construction routes shall be established where necessary and practicable to prevent noise impacts on residences, schools, and other noise-sensitive receptors.
- Where the City undertakes major street widening improvements where residential uses are adjacent to streets, the City evaluates the potential for noise exposure to residents and implementation of soundproofing as required.

N2 New development within the Project Area shall be subject to applicable City regulations at the time the redevelopment activity is proposed, Title 24 – Noise Insulation Standards, and implementation of site-specific building techniques. The site-specific building techniques include:

- Multi-family residential buildings or structures to be located within exterior CNEL contours of 60 dB or greater of an existing or adopted freeway, expressway, parkway, major street, thoroughfare, railroad, rapid transit line, or industrial noise source shall prepare an acoustical analysis showing that the building has been designed to limit intruding noise to the level prescribed (interior CNEL of 45 dB).

- Individual developments shall, to the extent feasible under a pedestrian oriented concept, implement site-planning techniques such as:
  - Increase the distance between the noise source and the receiver.
  - Using non-noise sensitive structures such as garages to shield noise- sensitive areas.
  - Orienting buildings to shield outdoor spaces from a noise source.
- Individual developments shall incorporate architectural design strategies, which reduce the exposure of noise-sensitive spaces to stationary noise sources (i.e., placing bedrooms or balconies on the side of the house facing away from noise sources). These design strategies shall be implemented based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards.
- Individual developments shall incorporate noise barriers, walls, or other sound attenuation techniques, based on recommendations of acoustical analysis for individual developments as required by the City to comply with City noise standards.
- Elements of building construction (i.e., walls, roof, ceiling, windows, and other penetrations) shall be modified as necessary to provide sound attenuation. This may include sealing windows, installing thicker or double-glazed windows, locating doors on the opposite side of a building from the noise source, or installing solid-core doors equipped with appropriate acoustical gaskets.

4.4.6 Conclusion

Implementation of Mitigation Measure N1 will reduce the short-term construction noise impact to a level less than significant.

Implementation of Mitigation Measure N2 will reduce the traffic noise exposure and stationary noise impacts to a level less than significant.

4.5 Cultural Resources

Information contained in this section is summarized from the cultural resources report, *A Cultural and Historical Resources Study for the Grantville Redevelopment Study and Project Area,* prepared by ASM Affiliates, Inc. (ASM, 2004). This document is located in Volume II Appendix E of this EIR.

4.5.1 Existing Conditions

Records Search and Literature Review

A records search to identify cultural research studies previously completed and cultural sites recorded within the Project Area and within a one-mile radius of the Project Area was completed at the South Coastal Information Center, San Diego State University. The results of this records search indicates that a total of 55 cultural resource studies have been completed within a one-mile radius of the Project Area. The majority of these studies were corridor surveys for Caltrans expansion projects on Interstates 15 and 8. A number of historic building assessments have also been completed within a one-mile radius of the Project Area. The remaining projects were completed for private development. Most of the previous studies have not included the Grantville Redevelopment Project Area. The only projects that have overlapped with the Project Area are Cupples' survey along Mission Gorge Road (1974), the East Mission Gorge Trunk Sewer Project (Kyle and Gallegos, 1995a) and a survey for the Mission Valley Water Reclamation project (Carrico 1990). Native American consultation was also conducted as an additional source of information regarding traditional cultural properties, areas of cultural sensitivity or any other issues of concern regarding the project area.

Based on the records search, no historic or prehistoric resources have been recorded within the Grantville Project Area. However, prehistoric and historic sites (not including historic structures) have been recorded within one mile of the Project Area (Table 4.5-1). These previously recorded sites are located outside of the Project Area and are concentrated in Mission Valley and Mission Gorge. The most prominent among these is the Mission San Diego de Alcalá and the site of the ethnohistoric village of Nipaquay (CA-SDI-35/202), located on the west side of the San Diego river, across from the Grantville Project Area. Associated with this important site is the Mission dam and flume (CA-SDI-6660H). Other sites include: four prehistoric habitation sites (SDI-239, -11,723, -12,088, and –13,708); five lithic scatters (SDI-8667, -11,081, -11,613, -12,089, and –13,905); four historic trash scatters (SDI-35, -11,270, -13,923, and –14,017); three shell scatters (SDI-9899, -14,015, and –14,016); two prehistoric quarries (SDI-8349, -11,611); one bedrock milling site (SDI-11,077); one pictograph site, possibly of historic date, with lithic scatter (SDI-4505H); one artifact scatter (SDI-11,612); and one isolate (P-37-015082).

The Geofinder database has records for 102 historic buildings and structures within one mile of the Project Area. Twenty-seven buildings on the San Diego State University Campus (well outside of the Project Area) are listed on the National Register. The remaining buildings are concentrated in the Normal Heights and Kensington Heights communities. No historic buildings or structures are recorded within the Project Area.

TABLE 4.5-1
Previously Recorded Prehistoric and Historic Sites Within One Mile of the Project Area

Site/Isolate #	Resource Description	Status
SDI-35/202	Mission San Diego de Alcalá/Kumeyaay village of Nipaquay	Significant
SDI-4505H	Pictographs and lithic scatter	Unknown
SDI-6660H	San Diego Mission dam and flume	Significant
SDI-8349	Prehistoric quarry	Unknown
SDI-8667	Sparse lithic scatter	Unknown
SDI-9899	Shell scatter and mutate	Unknown
SDI-11,077	Bedrock milling	Unknown
SDI-11,081	Lithic scatter	Not Significant
SDI-11,611	Prehistoric quarry	Unknown
SDI-11,612	Artifact scatter	Unknown
SDI-12,089	Lithic scatter	Unknown
SDI-13,905	Lithic scatter	Unknown
SDI-13,923	Historic trash dump	Not Significant
SDI-14,015	Shall scatter	Unknown
SDI-14,016	Shell scatter	Unknown
SDI-14,017	Historic trash scatter	Unknown
SDI-14,152	Heron site discovered under three meters of alluvial sands below water table on the banks of the lower San Diego River	Significant
P-37-015082	Isolate	Not Significant

Note: No previously recorded cultural resource sites have been identified within the Project Area.
Source: ASM Affiliates, Inc., 2004.

Historic Building Survey

ASM Affiliates, Inc. (ASM) reviewed SANGIS data regarding land parcels and building records within the Project Area. Buildings constructed prior to 1959 (45 years of age or older), meet the basic criterion for eligibility to the City Historical Resources Register. However, in order to allow for assessment of impacts to potentially eligible historic resources over the next five years, each of the buildings constructed prior to 1964 was visited during a field survey. Additionally, ASM conducted a street-by-street survey in an effort to identify other buildings constructed prior to 1964 for which construction dates are not available in the SANGIS data.

4.5.1.1 Archaeological Resources

The records search, literature review and Native American Consultation did not identify any previously recorded prehistoric or historic archaeological sites within the Project Area. However, a number of important sites are located in close proximity to the Project Area. These include the site of the ethnohistoric Kumeyaay village of *Nipaquay* and the Mission San Diego de Alcalá (CA-SDI-35/202), located on the west side of the San Diego River. Cultural resources sites associated with these historic properties, such as the Mission flume and dam, are known to be located along the San Diego River drainage. Because of the historical use of this area and the identification of previously recorded cultural resource sites, there remains

a high potential for previously undiscovered prehistoric and historic sites to be located along and adjacent to the San Diego River. For example, several previously unrecorded, but significant prehistoric sites have already been discovered, deeply buried in alluvium with the San Diego River Valley. These sites include the Heron site (SDI-14,152), discovered under three meters of alluvial sands below the water table on the banks of the lower San Diego River (ASM, 2004).

4.5.1.2 Historic Buildings and Structures

There are only 21 buildings located within the Project Area that have recorded construction dates prior to 1960: one from the 1910's, two from the 1930's, three from the 1940's and fifteen from the 1950's. An additional thirteen buildings of known or estimated date were recorded during the field survey conducted by ASM. In total, 28 buildings constructed prior to 1960, and an additional 13 buildings constructed between 1960 and 1964 were included in the inventory. Table 2 of the cultural resources report (see Volume II, Appendix E) provides a summary of buildings in the Project Area constructed prior to 1964; Table 3 summarizes buildings in the Project Area constructed prior to 1959; and, Table 4 summarizes buildings in the Project Area constructed between 1960 and 1964 (see Volume II, Appendix E). Of the 28 buildings dated to 1960 or earlier, recorded as a result of this study, almost all lack attributes that would qualify them for the City or State Register. Possible exceptions include 6980 Mission Gorge Road, 6974 Mission Gorge Road, 4385 Twain Avenue, and the Ascension Lutheran Church at 5106 Zion Avenue (Table 4.5-2).

TABLE 4.5-2
Potentially Historic Structures Located In Project Area

Structures	Resource Description	Status
6980 Mission Gorge Road	Constructed in 1930. *Ericison Pacific*. Warehouse/light industrial building, Concrete block construction with concrete foundation.	Unknown
6974 Mission Gorge Road	Constructed 1910. Residential unit. Side gabled wood framed house with a compound linear plan.	Unknown
4385 Twain Avenue	Constructed 1930. Small wood and stucco bungalow.	Unknown
5106 Zion Avenue	Ascension Lutheran Church	Unknown

Note: No previously recorded cultural resource sites have been identified within the Project Area.
Source: ASM Affiliates, Inc., 2004.

4.5.2 Impact Threshold

For purposes of this EIR a significant impact will occur if the proposed project would:

- *Cause a substantial adverse change in the significance of a historical resource as defined in Section 15064.5 of the CEQA Guidelines.*
- *Cause a substantial adverse change in the significance of an archaeological resource pursuant to Section 15064.5 of the CEQA Guidelines.*
- *Disturb any human remains, including those interred outside of formal cemeteries.*

4.5.3 Impact

4.5.3.1 Archeological Resources

There are no previously recorded archaeological sites located within the Project Area. However, there is a high potential for subsurface prehistoric and Spanish Colonial period archaeological sites to be located within the alluvial plain of the San Diego River. This would apply to those portions of the Project Area located west of Fairmont Avenue, and the undeveloped areas located north of Friars Road and north of Mission Gorge Road. Future redevelopment activities within these portions of the Project Area have the potential to result in a significant impact to previously unrecorded archaeological resources. A site-specific cultural resources survey would be required in order to identify presence or absence of cultural resources. Additionally, archaeological monitoring would be required within these areas during site development. Any newly discovered sites would need to be tested to determine significance, and site-specific impacts mitigated through avoidance and preservation, or completion of a data recovery program. Implementation of Mitigation Measure CR1 would reduce this potential impact to archaeological resources to a level less than significant.

4.5.3.2 Historic Buildings and Structures

Buildings greater than 45 years in age are potentially eligible to the City of San Diego Historic resources Register. Specifically, within the City of San Diego, properties that are 45 years old or greater and which have "integrity of setting, location, design, materials, feeling and association" may qualify for inclusion in the City's Historical Resources Register (City of San Diego 2000:10). There are no previously recorded buildings or structures within the Project Area and there are no historical properties listed on the City, State, or Federal registers within the Project Area. Of the 28 buildings dated to 1960 or earlier, recorded as a result of ASM's study, almost all lack attributes that would qualify the structures for the City or State Register. Possible exceptions include 6980 Mission Gorge Road, 6974 Mission Gorge Road, 4385 Twain Avenue, and the Ascension Lutheran Church at 5106 Zion Avenue. The following provides a description of each of these structures:

6974 Mission Gorge Road. This warehouse/light industrial building was constructed in 1930. It consists of a concrete block construction with concrete foundation. The front gable has a centrally placed opening and stepped false front. Two small wide wood framed windows are located high on the gable end and red brick inlaid in the gable forms an arrow shape.

6980 Mission Gorge Road. This side gabled wood frame house was constructed in 1910. The building consists of a one and one-half story building with a single story extension and an attached garage to the east. There is also a detached garage to the west. The roof is wooden shingles.

4385 Twain Avenue. This small wood and stucco bungalow was constructed in 1930. The front façade has a centrally placed door with picture windows on either side. There is a small front porch with shed roof supported on plain posts.

5106 Zion Avenue (Ascension Lutheran Church). The Ascension Lutheran Church was built between 1957 and 1960 and was designed by Des Lauriers & Sigurson, Architects. The structure was originally located to the rear of the Baptist church on Greenbrier Street and was moved to its present location in 1960 (the structure was designed to be moveable). The church has a dramatic, steeply pitched roof extending almost to the ground.

Formal evaluation to the City and State registers is specifically recommended for these buildings if any future redevelopment activities are anticipated to result in an impact to these structures. There are thirteen additional buildings dating between 1960 and 1965 that will reach the 45-year age threshold for potential eligibility to the City register over the next few years. However, none of these buildings appear eligible to the State or City register. The redevelopment plan will have a lifespan of 30-years. It is possible that future redevelopment activities would result in an impact to structures that are currently not considered historic, but would meet the age eligibility criteria in the future (e.g. 10-15 years in the future). As such, future redevelopment activities have the potential result in a significant impact to historic structures. Implementation of Mitigation Measure CR2 will reduce potential impact to historic buildings and structures to a level less than significant.

4.5.4 Significance of Impact

Implementation of future redevelopment activities has the potential to result in an impact to previously unrecorded cultural resources sites (archaeological and historical) as well as potentially significant historic structures. This potential impact is considered significant.

4.5.5 Mitigation Measures

4.5.5.1 Historic Resources

CR1 The following measures shall be implemented prior to proceeding with any redevelopment activities in the Project Area:

1) Any areas proposed for development that have not previously been surveyed for cultural resources within the last five years shall be surveyed to identify presence/absence of cultural resources.

2) Any proposed development which may disturb subsurface soils, including removal of existing buildings or construction activities located adjacent to the San Diego River, shall include archaeological monitoring.

3) All potential prehistoric sites located within the San Diego River alluvial plain that will be impacted by proposed development shall be tested under City of San Diego and CEQA Guidelines to determine significance. Testing through subsurface excavation provides the necessary information to determine site boundary, depth, content, integrity, and potential to address important research questions.

4) Alternative options for significant sites under City of San Diego and CEQA Guidelines can include: 1) avoidance, and preservation, or 2) mitigation of impacts from proposed development through completion of a data recovery program in compliance with CEQA Guidelines.

CR2 The following procedures shall be implemented before any Redevelopment Project activities can occur in the Redevelopment Project Area:

1) Conduct a historical resource survey of properties located within the Project Area that are 45 years of age and older resulting in a report with determinations of potential eligibility of said properties to the California Register of Historic Places and the City of San Diego Historic Resources List.

2) Obtain a concurrence on these determinations from the State Office of Historic Preservation and City Historical Resources Board.

3) If any potential historical resources are identified and are found to be eligible, identify potential impacts from the proposed redevelopment project actions, and determine appropriate mitigations as defined in CEQA Guideline Section 15064.5 to reduce such impact to a level below significance.

4.5.6 Conclusion

Implementation of the proposed Redevelopment Project has the potential to impact previously unrecorded, significant prehistoric and historic archaeological resources as a result of future development within the Project Area. Implementation of Mitigation Measure CR1 will reduce the impact to a level less than significant.

Implementation of the proposed Redevelopment Project has the potential to impact significant historical buildings and structures. Implementation of Mitigation Measure CR2 will reduce the impact to a level less than significant.